DICK SMITH ELECTRONICS

That's where you go!

Catalogue

COMPUTER • COMMUNICATION • ENTERTAINMENT • ELECTRONICS

$2

VISIT OUR WEBSITE: http://www.dse.co.nz

1999~2000

DICK SMITH ELECTRONICS

That's where you go!

Dear Customer,

We are pleased to introduce to you our newest Annual Catalogue for 1999/2000.

Dick Smith Electronics has been producing the Annual Catalogue for close to 30 years, providing consumers with an easy-to-read reference for our products.

Each year we work on updating information and pricing as a guide for our customers and their choices. The look of our Catalogue has changed dramatically over the years and has moved inline with the turn of the century.

This year's Catalogue has a contemporary and modern feel to take us into the new millennium. We have used the same colour category scheme as last year, so customers will find it easy to identify the four main areas – Communications, Computers, Entertainment and Electronics.

The contents of this year's Catalogue, are once again available on the Internet and you can access this via our web address (www.dse.co.nz). Since our Internet site was first launched some time ago, we have been refining it to make it more user-friendly and informative for people who access it.

Over the past year, Dick Smith Electronics has continued to grow. Since our last Catalogue, we have opened many new stores including four new 'PowerHouses' – electronic superstores – in Australia.

We anticipate this growth will continue into the next millennium.

We would like to take this opportunity to thank you for shopping with Dick Smith Electronics and we trust we may continue to earn your ongoing support.

Kind regards,

Jeff. Grover.

Jeff Grover
Managing Director
Australia & New Zealand

Rob Foreman
General Manager
New Zealand

Humble Beginnings to Now

From being a small company in rented premises in Sydney, to becoming a household name throughout Australasia, Dick Smith Electronics has grown extensively over the past 30 years. Not just in terms of size – our range has expanded to incorporate communications, computers and entertainment as well as electronics.

Where We Are Now

We have many stores, authorised stockists and franchisees throughout Australia and New Zealand with more planned for the future. This means that you are never far from a Dick Smith Electronics store. So when you need an electronic solution to a problem, you know you don't have far to go.

Superior Service

We provide what we believe, to be the most comprehensive service in Australasia. Our ongoing commitment to be the best in customer service, our constant search for new products, a comprehensive library of technical information and our own team of in-house specialists all work together to keep us ahead of our competitors. With our expert staff throughout Australia and New Zealand, we can answer any questions you may have.

Research Development and Quality Control

At Dick Smith Electronics our Engineering Department tests new products for performance and legal compliance before we consider introducing them to our range. Often we redesign goods to ensure safer standards. Likewise, our Quality Control procedures ensure our products meet the latest legal and technical requirements. Thanks to our staff's commitment to ensuring all products meet stringent safety standards, you can be confident you are buying safe and reliable products from Dick Smith Electronics.

For important consumer information regarding prices and stock availability, please refer to the inside back cover of this catalogue.

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Place your direct link orders now! Phone 0800 373 347 (toll free within New Zealand)

Other Ways to Shop

DICK SMITH ELECTRONICS direct link

Your order is processed immediately

Once you've given us your payment details, our computerised order fulfilment service does the rest. Just use the payment method most convenient for you.

We accept:

- All major credit cards: Bankcard, MasterCard, Visa, American Express, Diners Club and Drivecard.
- Cheques in $NZ.
- Money orders in $NZ.
- Bank Drafts in $NZ.
- Accounts: Many wholesale customers and Government departments have discovered the convenience of opening an account with us.
  Please telephone us for details.

We'll freight it to you any way you wish

Postal
New Zealand Post will deliver your parcel promptly at a very reasonable cost.

Courier
Delivery anywhere in New Zealand within a few days.

Air Freight
Fast and efficient! We'll even air-freight your goods overseas.

Please Note: Any of the following goods are considered dangerous and cannot be sent by air-freight or New Zealand Post:

- All caustic solutions (i.e. ferric chloride, photo etches, etc)
- Aerosol pressure packs (i.e. anything flammable, gas refills, cleaning sprays, etc)
- Pressurised goods ("screech" alarms, butane-powered soldering irons, etc)

When ordering, please specify road freight for these items. *Extra costs may apply.

Direct Link – Your quick and convenient way to the Dick Smith Electronics Home Shopping Centre

Through Dick Smith Electronics Direct Link you can buy anything from the entire range in our regular stores. Set up for the specific purpose of handling mail order customers throughout New Zealand and overseas, Direct Link has a national distribution centre in Auckland. Most items are despatched within 24 hours of ordering. Whether you live in the city or a remote area, we're only as far away as the nearest phone, fax or mailbox. Plus, our fax number and internet service are available 24 hours a day. We also accept credit cards by phone, fax, mail or e-mail directlink@dse.co.nz.

Orders and Enquiries

0800 373 347

Outside New Zealand +64 9 488 2135

(business hours)

Direct Link Facsimile

0800 800 290
+64 9 480 0868
E-mail directlink@dse.co.nz
(24 hours)

Dick Smith Electronics Mail Orders

Freepost 2170
Private Bag 102903
North Shore Mail Centre, Auckland.
No postage stamp required

Dick Smith Electronics Internet

You can also visit us at
http://www.dse.co.nz
(24 hours)

Satisfaction Guaranteed!

When you order through Dick Smith Electronics Phone, Fax & Mail Orders, you can rest assured that you're being looked after by a team of professionals. The following policies ensure your satisfaction:

- **14-Day Money-Back Guarantee!**
  If you're not completely satisfied with your purchase, return it in its original packaging and condition within 14 days, and we will refund your money – less transportation costs (unless goods are faulty). Faulty goods may be able to be returned after the end of the 14 day period. Check with your Dick Smith Electronics store or call us as above.

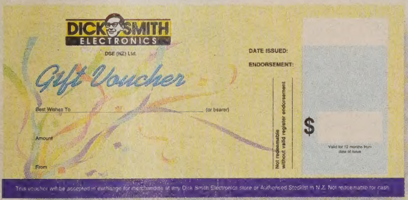
- **Automatic Back Orders**
  Out-of-stock lines are automatically placed on back order for later delivery. Or, if you prefer, we'll refund pre-paid orders.

*Please note "Change of Mind" refunds do not apply to Books, Batteries, Semi Conductors, Video Games or Computer Software.

Place your direct link orders now! Phone 0800 373 347 (toll free within New Zealand)

Our products are grouped into colour-coded categories, making them very easy to find. Simply look up the category of the items you are seeking in the contents page and follow the colour page headers that identify the section. For a more detailed index, turn to the back of this catalogue.

ask US
As Advertised



DICK SMITH ELECTRONICS

DSE (NZ) Ltd.

Gift Voucher

DATE ISSUED:

ENDORSEMENT:

Best Wishes To (or bearer)

Amount

From

Not redeemable without valid register endorsement

$

Valid for 12 months from date of issue

This voucher will be accepted in exchange for merchandise at any Dick Smith Electronics store or Authorised Stockist in N.Z. Not redeemable for cash

Gift Vouchers

If there are simply too many great gift ideas in this catalogue for you to choose from, purchase a Gift Voucher instead. Gift Vouchers are redeemable at any Dick Smith Electronics store or stockist in New Zealand and can be printed to suit the dollar value of your choice.

Warranty Refund and Exchange

Shop with confidence with our "Change of Mind" 7-day money-back guarantee (14 days with Mail Order). Where you change your mind, goods can only be accepted for refund or exchange in unmarked original condition and packaging complete with all instruction booklets, accessories etc. **Please Note: Refunds on "Change of Mind" purchases do not apply to books, batteries, semi-conductors, video games or computer software.**

Faulty goods returned for repair must be accompanied by a sales docket or proof of purchase. **Please Note: Under our terms of trade, the provisions of the Consumer Guarantees Act 1993 will not apply where goods are acquired for business purposes.**

Lay-By

For your convenience lay-by is available at all our company-owned stores. Simply leave as little as 10% deposit and you may take up to three months to pay the balance remaining. No account fees apply.

LAY-BY AVAILABLE

We accept...

MasterCard

Diners Club International

bankcard

VISA

DRIVECARD

eftpos Participating Cards Welcome Here

AMERICAN EXPRESS

Educational/Commercial Orders and Enquiries

If you're an educational institution, Government Department, Reseller or commercial entity then Dick Smith Electronics Corporate Division has the ability to provide you with the special services that you require. We offer you a focussed and dedicated team to service your specialised needs, whether they are of a business or educational nature.

International Customers

You can also take advantage of this service by contacting our sales team regarding the Dick Smith Electronics' product range. We have an efficient and easy to use service which offers world wide access, on a vast range of products, and speedy delivery. We look forward to hearing from you so phone us, fax us or mail us. All international deliveries are New Zealand tax exempt.

Commercial Enquiries

Please contact us using the phone, fax or address details highlighted opposite on our Direct Link mail order service page. Or email us at **wholesale@dse.co.nz**

For important consumer information regarding prices and stock availability, please refer to the previous pages and the inside back cover of this catalogue.

Store and Authorised Stockist Locations

Store Locations

WHANGAREI
14 John Street
Ph 09 438 0687 Fax 09 438 9635

AUCKLAND

Albany: Don McKinnon Drive,
Mega Centre
Ph 09 415 7410 Fax 09 415 4360

Browns Bay: 99 Clyde Road
Ph 09 479 3024 Fax 09 478 2913

Takapuna: 451 Lake Road
Ph (09) 486 4037 Fax (09) 486 4039

Birkenhead: 31 Rawene Road
Ph (09) 488 2160 Fax (09) 488 2161

City: 26-28 Wyndham St
Ph (09) 303 1355 Fax (09) 303 2783

Avondale: 1795 Great North Road
Ph (09) 828 6696 Fax (09) 828 5622

Henderson: 11-15 Railside Avenue
Ph (09) 838 8024 Fax (09) 838 9258

Karangahape Road
442 Karangahape Road
Ph (09) 309 4402 Fax (09) 373 4456

Newmarket
50 Remuera Road
Ph (09) 524 7033
Fax (09) 524 7033

Pakuranga
GALLERIA SHOPPING CENTRE
Reeves Rd
Ph (09) 576 6604 Fax (09) 576 4446

Manukau City
Cnr Ronwood Avenue & Great South Rd
Ph (09) 262 4150 Fax (09) 262 4151

Papakura: 23 Broadway
Ph (09) 298 0943 Fax (09) 296 1713

HAMILTON

Barton Street
299 Barton Street
Ph 07 839 4491 Fax 07 838 1226

Ward Street
131-135 Ward Street
Ph (07) 838 1484 Fax (07) 834 1138

TAURANGA
Cnr Willow & Spring Streets
Ph 07 578 7071 Fax 07 577 6674

ROTORUA
1175 Pukuatua Street
Ph 07 349 0270 Fax 07 348 2464

NAPIER
233 Emerson Street
Ph 06 835 5137 Fax 06 834 0463

NEW PLYMOUTH
70-72 Devon Street East
Ph 06 758 3309 Fax 06 758 5034

PALMERSTON NORTH
Cnr Fitzherbert Ave & Ferguson St
Ph 06 359 4447 Fax 06 359 4452

WELLINGTON

Featherston Street
171 Featherston Street
Ph 04 473 9858 Fax 04 473 0407

Vivian St:
86 Vivian Street
Ph 04 384 8198 Fax 04 801 6258

Manners Mall:
4 Manners Mall
Ph 04 385 6788 Fax 04 385 6785

Lower Hutt:
90 Queens Drive
Ph 04 566 2022 Fax 04 566 1277

Porirua:
16 Lydney Place
Ph 04 237 6654 Fax 04 237 6456

NELSON
1 Montgomery Square
Ph 03 548 9161 Fax 03 548 2900

CHRISTCHURCH

Manchester Street
130 Manchester Street
Ph 03 365 5560
Fax 03 365 5561

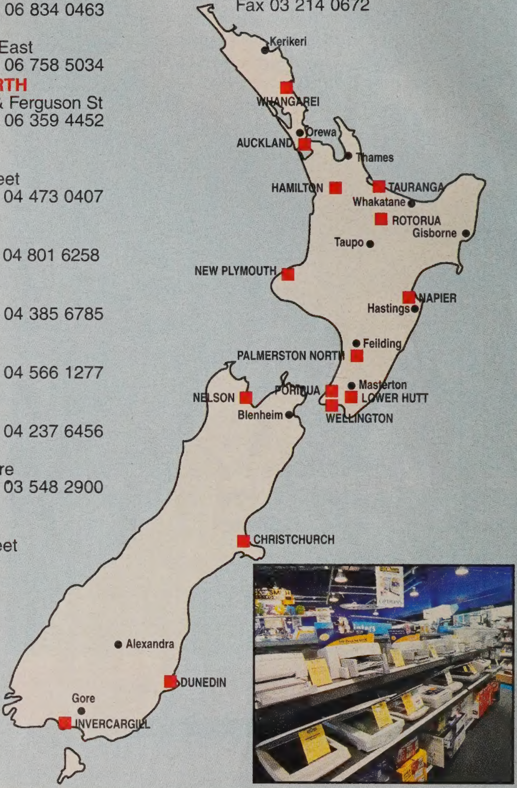
Colombo Street:
Cnr Colombo
& St Asaph Sts
Ph 03 366 2703
Fax 03 379 4684

Papanui
Cnr Main North
Rd/Winston Avenue
Ph 03 352 8770
Fax 03 352 7608

Riccarton
Shop 20 Countdown Complex
Rotherham Street
Ph 03 343 0812 Fax 03 343 3880

DUNEDIN
342 Moray Place
Ph 03 474 1096
Fax 03 474 1032

INVERCARGILL
89 Spey Street
Ph 03 214 4363
Fax 03 214 0672



Authorised Stockist Locations (Authorised stockists may not carry all product lines - but will order in on request)

KERIKERI
Northern Computer Technical Services
63 Main Street, Kerikeri.
Phone (09) 407 5589 Fax (09) 407 5587

OREWA
Tronix
Westpac Plaza, Bakehouse Lane, Orewa.
Phone (09) 426 2007 Fax (09) 427 8085

THAMES
Piaggi Systems & Software Ltd
25 Goldfields Mall, Mary Street, Thames.
Phone (07) 867 9215 Fax (07) 867 9226

WHAKATANE
Boonen Electronics
106 The Strand, Whakatane.
Phone (07) 308 8761 Fax (07) 308 9151

GISBORNE
AMPS Electronics
80 Gladstone Road, Gisborne,
Phone (06) 868 1366 Fax (06) 867 9103

HASTINGS
Baytech Services Ltd
114 North King Street, Hastings.
Phone (06) 878 8962 Fax (06) 878 5509

MASTERTON
Hedley's Home & Office
152 Queen Street, Masterton.
Phone (06) 370 9202 Fax (06) 370 9303

FEILDING
David Brice Electronics Ltd
47 Kimbolton Road, Feilding.
Phone (06) 323 7141 Fax (06) 323 7921

BLENHEIM
Quantum Electronics
5 Maxwell Road, Blenheim.
Phone (03) 578 1132 Fax (03) 577 8981

ALEXANDRA
Central Betta Electrical
15 Tarbert Street, Alexandra.
Phone (03) 448 7317 Fax (03) 448 7317

GORE
Anderson Electronic Services
183 Main Street, Gore.
Phone (03) 208 7768 Fax (03) 208 1364

TAUPO
Smart Phones
Cnr Tamamutu & Gascoigne Sts, Taupo.
Phone (07) 377 0668 Fax (07) 377 0669

Finance Terms & Conditions: Easy monthly repayments are available to approved purchases on any product we sell over $500 with the exception of scanning receivers, computer hardware upgrades and software sold separately. Software sold with a computer will be financed if its contents doesn't exceed 10% of the total cash price. Usual deposit is 20% of the total cash price, but lower deposit finance may be available as long as credit and other criteria are met. Repayments can be spread from 6 months up to a maximum 3 year term. All agreements attract a $45 booking fee – and a comprehensive contents insurance plan must be taken if you don't have a suitable existing policy. Normal credit criteria and special conditions apply. We also accept Diners Club, American Express, Mastercard, Farmacard, Visa and Drivecard. Home/Office delivery available.

Authorised Distributorship Now Available

Are You Missing An Opportunity?

ask US
software titles
As Advertised

Electronic
Hardware
Plugs & Sockets

...Become An Authorised Distributor!

Do you already have a business but would like to see it expand its profit making potential? Or perhaps you've been thinking about changing your lifestyle. Outstanding business opportunities now exist to become a Dick Smith Electronics Authorised Distributor. You can become part of New Zealand's most successful electronics retailer trading in country towns throughout New Zealand.

You'll get all the advantages of...

- The reputation and identity of New Zealand's best known electronics retailer.
- Exclusive products and the pricing advantages only possible from a national retail group.
- Plus the opportunity to take advantage of our extensive national promotions.

For more information please call:

Head Office: Phone Auckland (09) 488 2198
Freefax 0800 800 290

Or write to: Dick Smith Electronics Corporate
Private Bag 102 903, North Shore Mail
Centre, Auckland, New Zealand

WHOLESALE PRICES FROM DICK SMITH ELECTRONICS CORPORATE

DICK SMITH ELECTRONICS TRADE CASH CARD

The Dick Smith Electronics Trade ID Card enables our Trade Cash Customers to purchase goods at any Dick Smith store nationwide at Trade Prices. This card will also entitle you to regular mailouts and Trade Specials.

If you are:
A. A Reseller of Product
B. A Manufacturer
C. A Service Company
D. A Registered Technician
E. Have a relevant Tradesman's Certificate
– you may apply at your local Dick Smith store, or send your request to: Dick Smith Electronics Corporate, Private Bag 102903, North Shore Mail Centre, Auckland.

Trade Prices: A Trade Price List is available to our Trade customers on 3.5" Disk, or on our Bulletin Board Service. There is an initial cost of $5+GST for the price disk, however, it may be updated free of charge at any time by returning it to us at Dick Smith Corporate, Private Bag 102903, North Shore Mail Centre. Access to our Bulletin Board is free. However, normal toll charges will apply. The phone number for the bulletin board service is 09 488 2189. Full instructions for using the bulletin board are onscreen. Please use your account no. or Trade Card no. to identify yourself, and after verification you will be given access to your current level of pricing.

Wholesale Prices: You may be eligible for huge savings by buying in bulk! Schools, Industry, Business, Government Departments... in fact, any organisation purchasing products in large or commercial quantities, may be eligible for our low Wholesale Prices! *Ring Dick Smith Electronics Corporate now on (09) 488 2198*

Business Products: Large Corporation or Small Business – one quick phone call to Dick Smith Electronics can solve your business requirements... computers, computer consumables, software, phones, answering machines, cellular phones, facsimiles, etc, etc. Call now and we can advise you on a range of products suited to your needs and discuss special pricing arrangements.

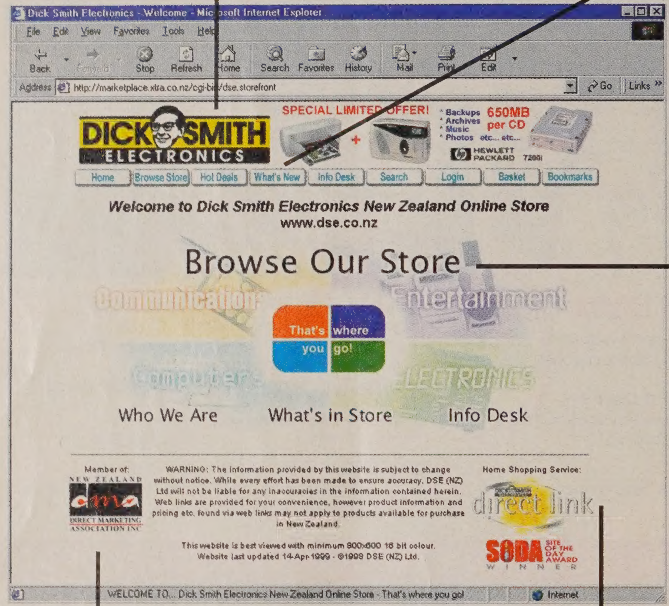
DICK SMITH ELECTRONICS

That's where you go!

http://www.dse.co.nz

Shop for a bargain in our Hot Deals section

Discover exciting new products in our "What's New" section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Back Forward Stop Refresh Home Search Favorites History Mail Print Edit
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Go Links »
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Archives
Music
Photos
650MB per CD
etc... etc...
HEWLETT PACKARD 7200i
Home
Browse Store
Hot Deals
What's New
Info Desk
Search
Login
Basket
Bookmarks
Communication
Entertainment
That's where you go!
Computer
ELECTRONICS
Who We Are
What's in Store
Info Desk
Member of:
NEW ZEALAND dma DIRECT MARKETING ASSOCIATION INC
Home Shopping Service:
direct link
SODA SITE OF THE DAY AWARD WINNER
Internet

Welcome to Dick Smith Electronics New Zealand Online Store
www.dse.co.nz

Browse Our Store

WARNING: The information provided by this website is subject to change without notice. While every effort has been made to ensure accuracy, DSE (NZ) Ltd will not be liable for any inaccuracies in the information contained herein. Web links are provided for your convenience, however product information and pricing etc. found via web links may not apply to products available for purchase in New Zealand.

This website is best viewed with minimum 800x600 16 bit colour.
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WELCOME TO... Dick Smith Electronics New Zealand Online Store - That's where you go!

View the current Top Ten Playstation, Nintendo 64, and PC software titles.

HUGE PRODUCT RANGE
Browse over 8000 products organised by department, or search for specific products using our quick and easy search engine.

Locate your nearest store and determine the availability of any product, or check the next due date.

Member of NZ DMA for your own peace of mind

Dick Smith Electronics Direct Link – professional, quick, and convenient home shopping service

For VIRTUALLY all your Communications, Entertainment, Computer and Electronics needs

Shop from the convenience of your keyboard!

Our full range of over 8000 products is available to browse on the Internet. Simply go to our online store web site at www.dse.co.nz and browse or search for any product you desire. There is no obligation to purchase, however if you wish to purchase online you will be dealing with the same reliable "Direct Link" service and delivery that we have provided to our mail order customers for many years. The web site is updated daily and the secure server ensures that your credit card details are seen by no one else.

Buying is Easy

Once you have located the products you require, simply click on the basket icon to add the products to your shopping basket. At any time you can easily add, change, or remove products from your shopping basket. When you are ready to buy, just click on "Order Now" to proceed to the checkout. If you haven't already done so, you will be prompted to register with your name and address details to enable us to fulfil you order. You can also register via the "Login" page without any obligation to purchase. By registering you will be able to bookmark products and save your basket if you wish to purchase at a later time.

Secure and Safe Credit Card Entry

When you place your order, you are taken to "secure" web pages. This means that at the checkout, our servers and your PC encrypt (scramble) the credit card details and delivery address that you enter into your computer. As your details are encrypted, you are assured that this information is safe and remains private. You can find out more about security and privacy, and the many other features of our online store by visiting the "Info Desk" page.

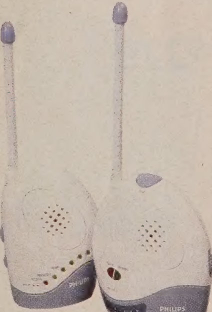
We accept

Diners Club International
VISA
MasterCard
bankcard
AMERICAN EXPRESS

Stay In Touch Around The Home

With babies or young children peace of mind is paramount for parents, that's why a baby monitor or an intercom is such a worthwhile investment.

Being able to be in the garden or downstairs while the children are down for their afternoon nap and knowing you'll hear them should they get distressed provides a parent with great comfort. Once they get a bit older, and are playing their latest CD, it is sometimes difficult to get their attention, an intercom saves your vocal cords, and avoids stress in the home.



PHILIPS

SC366 with Room Temperature Indicator

A cordless babysitter for 24 hour watch. Easy to install, talk-back possibility for intercom use. Baby room temperature indicator. Rechargeable for completely cordless operation.
Cat F 9922

$199.95

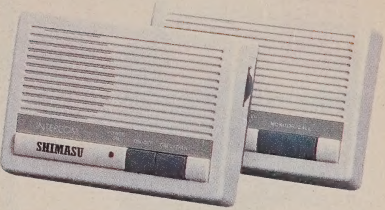
PHILIPS
PHILIPS

PHILIPS

SC362

Easy to use and install, this monitor has good sensitivity and can be mains or battery operated. Comes with two mains packs.
Cat F 9919

$119



SHIMASU

Two Station Intercom

Great for around the home or office, this bargain priced intercom has adjustable volume control, push-to-talk button and a monitoring indicator. Includes master and sub stations plus cable.
Cat F 1034

$29.95

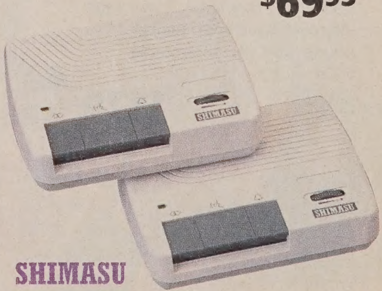
Kiddicall
Kiddicall

Kiddicall

Baby Monitor

Clip the receiver to your belt or mount it on your desk/wall and you'll always know what your baby's up to! It can run on either batteries or mains power and has power-on indicator, voice-activation and volume control.
Cat F 1270

$69.95



SHIMASU

Wireless Intercom

Becomes a room monitor at the touch of a button! Also, when it's in use as a monitor, you get the convenience of voice activation. It includes talk-lock key for room monitoring, plus it's mains powered and expandable.
Cat F 1240

$119

NEW FOR '99

Uniden

Cordless Phone CS100

Single channel, last number redial, auto talk. Enjoy the freedom and convenience of a cordless phone.
Cat F 9941

$109

Uniden

610 Cordless Phone

10 selectable channels, call waiting compatible, hearing aid compatible, 10 memories and paging (1 way) all in a compact unit. In Ivory.
Cat F 7244

$129

SANYO

CLT136

10 number memory, 10 channels with auto scan. Receiving level control and hearing aid compatible. 3 week battery standby.
Cat F 9342

$159

Panasonic

KXT4026

10 channel auto scanning, wall mountable, high gain rubber antenna, 10 station memories, 30 day battery standby.
Cat F 7404

$159

NEW FOR '99

Uniden

Cordless Phone CS200

Features true compander, 10 channel switchable, 14 day standby, 23 memories, 2 way page intercom, handsfree speaker-phone base. Wall mountable, 500m range.
Cat F 9018

$179

NEW FOR '99

Panasonic

Cordless Phone KX-TC187

30 day battery standby, 10 speed dials, page and intercom, dual keypad and handsfree speakerphone.
Cat F 9943

$229

Uniden

DX834 Cordless Phone

Ivory colour. Voice scramble. 10 (Aus)/25 (NZ) channel auto scan. 10 regular speed dial memories. Wall mountable. Last number redial. Page/fine and flash/recall functions. Other colours available.
Cat F 7254

$179

NEW FOR '99

Due mid June

Uniden

XCI 660 Caller Display Cordless

Not only is this phone "Caller Display" ready (in conjunction with Telecom's Caller Display Service), the screen stores numbers with names, and it has 25 channels for added caller clarity and security.
Cat F 9348

$\$229^{95}$

AUDIOLINE

Cordless Phone

10 operating channels. 10 speed dial memories. Any key answer & quick dial. Out of range audio warning. 7 hour talk time/7 days standby time. 1 year warranty. Ivory
Cat F 9951

$99

NEW FOR '99

Panasonic

Cordless Phone KX-TC187

Features 30 day battery standby, 10 speed dials, page and intercom, dual keypad, handsfree speakerphone.
Cat F 9943

$229

NEW FOR '99

Uniden

Dual Line Cordless Phone DX8200

2 line operation, 25 channel autoscan, voice scramble security, speakerphone, dual keypad, conference calling, intercom and 20 number memory dialling.
Cat F 7261

$269

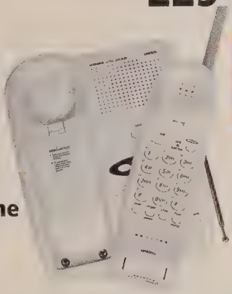
NEW FOR '99

Panasonic

Cordless Caller ID KX-TCC116

Features caller ID, directory dial, backlit keypad, ultra charge, dual keypads and speaker phone. Intercom with 2-way paging, ringer volume control on handset and is wall mountable.
Cat F 7422

$279



Uniden

XC650 Cordless Speakerphone with Digital Answering System

With dual keypad to enable dialling from the handset and the base, 10 channels, 30 memories and 14 day battery standby. The latest "digital" technology (no more tapes). With 10 channels, remote call screening, day and time stamp and much more.
Cat F 8245

$299

NEW FOR '99

Panasonic

Cordless Phone KXTCM418

Features 10 channels, Dynamic Sound Focus, 10 speed dials, Page and Intercom, backlit keypad, 16 min digital TAM, time and date stamp, call screening and toll saver.
Cat F 9944

$329

NEW FOR '99

Uniden

XC680 Cordless Phone

The complete solution! Cordless phone, Digital Answer Machine and Caller Display ready! (See page 10 for details). 25 Channel Autoscan, Time and Date Stamp, 20 name number memories, conversation record feature, and the ability to see who has hung up and NOT left a message (with Caller Display).
Cat F 9914

$349

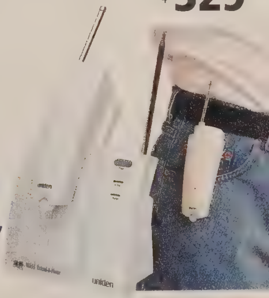
NEW FOR '99

Uniden

DG910c Cordless Phone

Metallic charcoal colour. Digital spread spectrum for longest range, clearest sound, best privacy. 20 regular speed dials memories. Backlit keypad. Any key answer. Multiple ring tones. Call Waiting compatible. Wall mountable. Last number redial. Page/find and flash/recall functions.
Cat F 7265

$419.95



Uniden

Uniden Mini 'Clip' Cordless Phone

This amazing compact phong with 'clip' design has 25 channels to ensure call clarity and privacy, illuminated keypad and 20 memory dials. The tiny handset has a built in belt clip making it easy to use in and around the house. In Grey or White.

Cat F 9347 F 9349

$199

Phones – Corded

SHIMASU

Basic 2 Piece Phone

A smart two piece available in 2 fashion colours. Always good for a back up in power failure as cordless phones do not work without power. Also available in beige.
Cat F 9518 F 9519

$34.95ea

NEW FOR '99

SHIMASU

2 Piece Phone

Lift your decor with this stylish slim-line phone. Great price metallic finish in silver or charcoal. Wall mountable with back-lit keys and LCD display.
Cat F 9522 F 9523

$49.95ea

NEW FOR '99

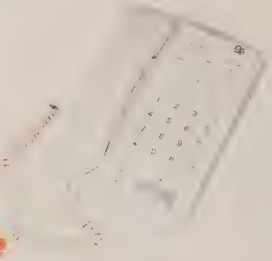
swatch

Phones

A 2 in 1 phone, you can talk on the handset and the base. 3 in 1 touch dials, 10 memory, LCD display.

Blue Moon	Cat F 9915
Limelite	Cat F 9917

$129.95ea

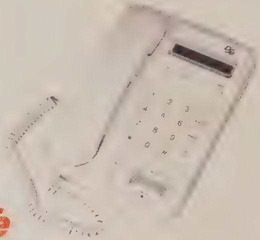


DSE

13 Memory Corded Phone

Perfect for the busy home or in the office, this is our biggest selling phone. It includes a visual ringer, mute button, redial button, adjustable ringer and is PABX compatible.
Cat F 9516

$59.95



DSE

Handsfree Speakerphone with LCD

Great value for money, this handsfree speakerphone has a call timer, 13 memories, mute button, redial, adjustable ringer and is call waiting and PABX compatible.
Cat F 9517

$79.95

NEW FOR '99

pacific TELEPHONES

PABX Telephone 823

Full PABX facilities, 20 one touch dials, ring indicator, call waiting indicator, variable ring pitch control. Wall mount bracket, mute button, switchable hookflash timing, redial and recall.
Cat F 9947

$89.95

pacific TELEPHONES

845 Handsfree Speakerphone

20 single touch memories, recall and flash function, ringer volume control, large number redial, large dialling keys and wall mountable.
Cat F 9171

$99.95

pacific TELEPHONES

852 Executive Handsfree Speakerphone

20 number memories, recall or flash, large 16 digit display, visual ringer, ringer volume adjustment and off, large number redial, call timer.
Cat F 9246

$129

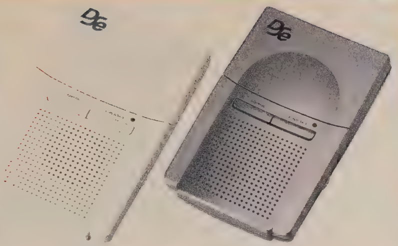
Panasonic

KXT2365 Executive Handsfree Speakerphone

"Display Deny" – secret phone numbers will not appear on the display, 28 speed dials, ability to temporarily store busy or unanswered numbers during a conversation, mute and hold functions.
Cat F 9361

$199.95

NEW FOR '99



DSE

Remote TAM

High quality micro cassette. Remote activation and message retrieval. Voice activated messages. Call screening. Flashing message indicator. Toll saver. Message protection in a power failure, beige.

Cat F 9628 F 9629

$\$59^{95}$

NEW FOR '99

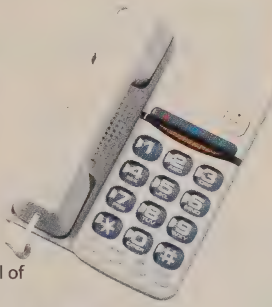
DSE

Digital TAM PR370MX

16 minute recording time. LED call counter. Time day stamp. Voice prompting. Adjustable volume. Answer only mode. Skip and save messages. Call screening.

Cat F 9934

$\$109^{95}$



DSE

Big Button Phone with Answer Machine

With the advantage of large buttons, this smart phone answer machine has a high quality micro cassette for incoming messages, a digital outgoing message. A visual ringer (flashes), remote retrieval of messages, 13 memories.

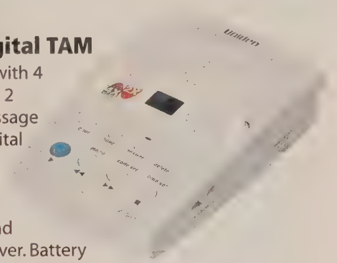
Cat F 9514

$\$119^{95}$

NEW FOR '99

Uniden

7100A Digital TAM



Fully digital with 4 memory and 2 sampling rates. Fast message playback, 18 minute digital record time. Day and time stamp, call-breakthrough, remote access, digital display and message counter, toll saver. Battery backup option, dual outgoing message capacity. Call screening, memory backup, room monitor, remote on/off, memo recording.

Cat F 9016

$130

Panasonic

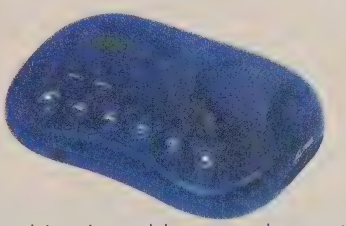
KXT1000 Remote Phone Answering Machine

Digital display, memo recording, call screening automatic interrupt, toll saver and remote "turn on".

Cat F 9204

$\$149^{95}$

NEW FOR '99



swatch

Digital TAM

18 minutes total record time, time and day stamp, volume control, high sample range for exceptional clarity. Full remote access, 2 outgoing messages, toll saver function. Includes AC adaptor, battery lead, instructions, 12 month warranty.

Cat F 9928

$\$159^{95}$

digitor

Micro Cassettes

In handy packs of three.

30 min	Cat C 3371	$\$12^{95}$ pk
60 min	Cat C 3373	$\$14^{95}$ pk

SONY

Micro Cassettes

Pack of 3	Cat C 3365	$\$16^{95}$

Panasonic

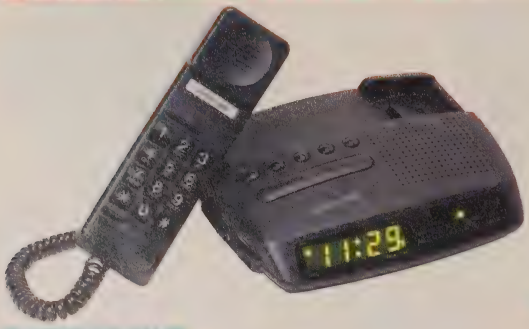
KXT1450 Answering Machine

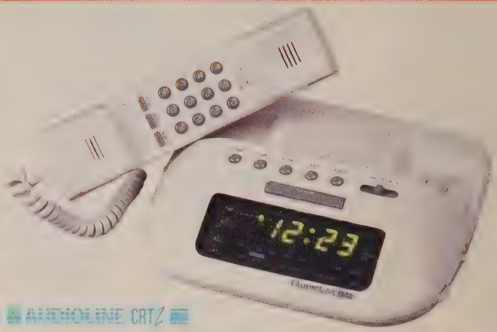
A tone remote control system with auto logic, extended outgoing message tape and skip, remote memory playback, room monitoring, memo message facility and automatic interrupt.

Cat F 9205

$\$199^{95}$

Clock Radios




AUDIOLINE CRT2

CRT8 Phone/Clock/Radio Black

Great for the bedroom, this compact unit includes mute, last number redial, adjustable ringer volume, 12 hour LED alarm clock, dimmer, AM/FM radio, snooze and sleep modes and a radio mute on the handset pickup.
Cat F 9358

$\$79^{95}$

CRT8 Phone/Clock/Radio White

Great for the bedroom, this compact unit includes mute, last number redial, adjustable ringer volume, 12 hour LED alarm clock, dimmer, AM/FM radio, snooze and sleep modes and a radio mute on the handset pickup.
Cat F 8654

$\$79^{95}$

Product may visually vary a little from the picture shown above

Headsets for the Office

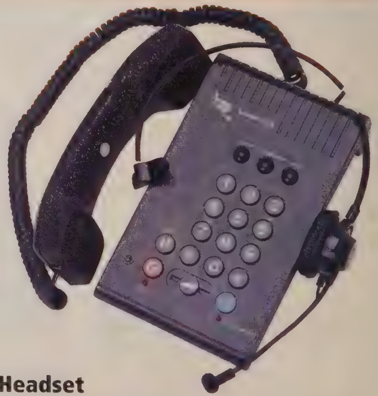
If you or your staff spend a lot of time on the phone, consider the freedom a headset will provide. Both hands are still free to find documents, type or write down important information, without the restriction of straining your neck to hold a handset between your ear and shoulder!

Phone Headsets

Choose the telephone or accessory you want from one of the largest ranges available in New Zealand. Corded or cordless, we'll have the one to suit your budget, with the features to suit your lifestyle.

Always have a corded backup

You should always have a corded phone in the house as a backup, as cordless phones cannot operate without power, so in the event of a power failure, you can still make and receive calls.



Pacific Headset

This headset/handset combination includes lockable mute button, incoming sound level adjustment, 10 dual touch memories, 3 ringer volume controls and last number redial.
Cat F 9184

$199

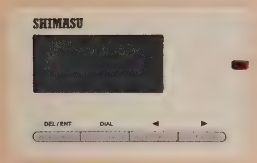
Telecom Network Services

We are pleased this year to announce the release of the Telecom "Spot" services in all of our stores. Not only can we sell you the product you may require for your home or office, but now we can enhance the service we offer you by offering service solutions as well.

Please note that not all of these services are available in all exchanges – please ask instore for our staff to check your local exchange for compatibility.

Caller Display

Telecom's latest service will allow you to see the phone number of the incoming call before you answer it – Caller Display requires a phone or unit that is able to display these calls such as the two shown below. (Not all incoming numbers will be displayed. Some pay phone, cellphones and international calls will come up as "private numbers" as well as numbers that the caller has selected to dial the "number withhold" code.) NB * Caller Display does not currently allow Alpha to be displayed with numbers.



SHIMASU
Caller ID with Redial
Stores up to 99 call message of 10 digit numbers. Auto scan lists latest call from frequent caller. Requires 4 x "AAA" batteries (not included).
Cat F 9823

$79.95

Uniden
XC1660 Cordless Phone
Not only is this phone "Caller Display" ready (in conjunction with Telecom's Caller Display Service), the screen stores numbers with names, and it has 25 channels for added caller clarity and security.
Cat F 9348

$229.95

Panasonic
Cordless Caller ID KX-TCC116
Call ID, directory dial, back-lit keypad, ultra charge, dual keypads and speaker phone, intercom with 2-way paging, ringer volume control on handset and wall mountable.
Cat F 7422

$279

Uniden
Cordless Phone XC680
With digital answer machine. Call Display ready. *25 channel autoscan, 20 name number memories.
Cat F 9914

$349

Call Minder

Call Minder is another way to keep in touch with your friends and family, no matter where you are or how busy you may be. It's a 24 hour a day answering service that takes messages for you when you are out or even when you are on the phone.

TIP As many customers are now using the internet, which ties up your line to the house, Call Minder acts as a diversion therefore even if you are on the phone you can receive messages and clear them when the line is free.

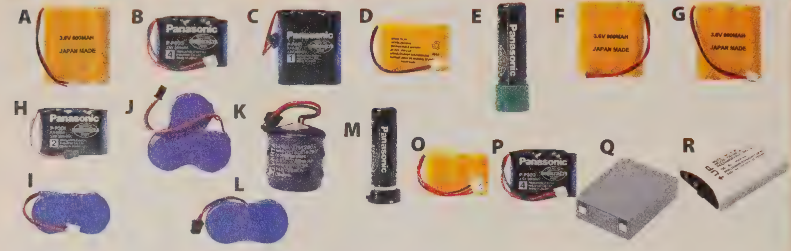
FaxAbility

FaxAbility allows you to operate a fax and a telephone efficiently on the one line, giving you a second phone number for the fax. Your second phone number has a distinctive ring and you will know which calls are for you and which are for your fax. Your fax number will be printed in the white pages free of charge.

Call Waiting

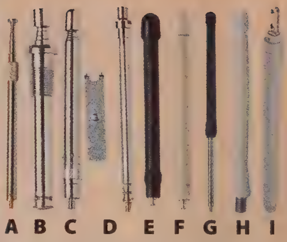
Call Waiting will let you know while you are on the phone that another caller is trying to get through and you can very simply go to that caller and address them and then return to your original call.

Cordless Phone & Specialist Batteries



Cordless phones and similar devices need high performance batteries that can be constantly charged and discharged. These batteries will fit most cordless phones and speciality devices.

	Cat. No.	To Suit	Price
A	S 7349	Telecom Manhattan	$27.95
B	S 7360	James Hardie CP1000	$27.95
C	S 7356	Panasonic KXT 3806/3826/3716	$27.95
D	S 6178	Sanyo CLT5200/5280/5800/CLA1380	$27.95
E	S 3307	Panasonic KXT3000	$27.95
F	S 7358	Tele 1150	$27.95
G	S 7359	GEC w/ph, Telecom 200/400	$27.95
H	S 7361	Uniden SC310/320/340/343/360/KXT4300	$27.95
I	S 3510	Shimasu	$27.95
J	S 3507	Custom C5000	$27.95
K	S 3508	Custom C5000	$27.95
L	S 3509	Uniden Profile	$27.95
M	S 3421	Panasonic KXT4006	$27.95
O	S 3430	DSE 10 Channel Cordless	$27.95
P	S 7360	J Hardie Cordless	$27.95
Q	F 9839	Sony Sp1010/2010	$44.95
R	F 9406	Uniden EXP9100	$49.95



Replacement Antennae for Cordless Phones

Metal		
A. Shimasu and other	F 7902	$16.95
B. Suits KXT3806/26/36	F 7934	$29.95
C. Suits CLT5280/5880	F 7936	$29.95
D. Suits KXT3000	F 9218	$29.95
Rubber		
E. Suits most Sanyo	F 7938	$29.95
F. Suits most Sanyo White	F 7927	$24.95
G. Suits KXT3000	F 7922	$29.95
H. Suits KXT3806/26/36	F 7924	$29.95
I. Suits most Uniden	F 7930	$29.95

Miscellaneous

Telephone Line Pick Up

Enables you to record conversations.
Cat F 2705 **$9.95**

Insert Tool

Cat F 9024 **$2.95**

Swivel Jack

Stop your telephone cord from tangling.
Cat F 5116 **$9.95**

Crimping Tool

Attaches line plug to telephone cable.
Cat F 9025 **$19.95**

Message Stopper

Automatically switches off your answering machine when you pick up your phone.
Cat F 2807 **$9.95**

Extension Bell Ringer

This allows you to bring the ring closer to where you are. Ideal for phones with a soft ring or phones located at the other end of the house.
Cat F 9761 **$19.95**

Telephone Privacy Adaptor

With 2 extension sockets and 'T' shaped plug nobody can listen in.
Cat F 9772 **$16.95**

Modular Privacy Switch

If you've got more than one phone and want to speak in private, this switch will ensure no one can listen in.
Cat F 2804 **$9.95**

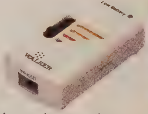
Teleflash 1

A high intensity light and extra loud sound to let you know the telephone is ringing. Perfect for noisy workshops, garages, or the hard of hearing and partially sighted. Comes with a 5 metre cable.
Cat F 5128 **$69.95**

NEW FOR '99

Teletone Loud Ringer ES2-FL

NZ 2 wire system. Volume control, 4 selectable sounds, input 60-100VAC ringing. 3 metre lead, 70-90dBa at 1 metre and telepermitted.
Cat F 9949 **$74.95**



Clarity Amplifier

Amplifies high end sounds most often lost by the hearing impaired, includes volume control with a corded phone fitted with modular plugs on the handset and base.
Cat F 9345 **$79.95**

NEW FOR '99

Teletone Outdoor Ringer Bedlam EX-1

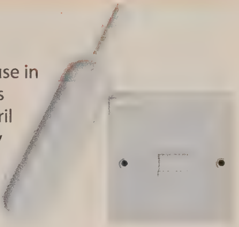
NZ 2 wire system. Volume control, 4 selectable sounds, input 60-100VAC ringing. 84-105dBa at 1 metre, telepermitted, line powered and waterproof.
Cat F 9948 **$139.95**

Wall Sockets

Phone Line Crimping Tool
Cuts, strips and crimps modular style telephone line cords. Suits 4-pin and 6-pin modular plugs.
Cat T 2591
$16.95

Extension Socket
Surface mount.
Cat F 9005
$16.95

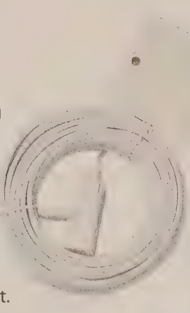
2 Wire Jack Point
Required for use in all new homes built since April 1997. Also any homes converted since that date.
Cat F 9150
$26.95



Telepak Master Socket
Surface mount.
Cat F 9778
$32.95

Telepak Tee Joint Box
Surface mount.
Cat F 9782
$26.95

DSE – DIY Extension Kit
Everything you need to run your own telephone extension in one handy kit.
Cat F 9121
$32.95



Extension Leads & Handset Cables

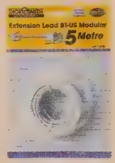
Phone Extension Leads 1.5m

BT-US Standard Cat F9006	$9.95
BT-US Reverse Cat F 9015	$9.95

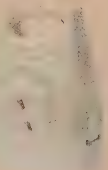
Phone Extension Leads 3m

BT to Modular Standard Cat F9413	$12.95
BT to Modular Reverse Cat F 9041	$12.95

Modular to BT Adaptor
Adapts STP Telecom (BT) type plug to the modular system for connection of devices using the international modular system. 5m.
Cat F 9102
$16.95



Extension Reel 15m
Rolls up neatly to the desired length standard plug and the reel has a double socket.
Cat F 9103
$24.95



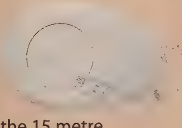
DICK SMITH
Extension Lead
15 Metre

Extension Leads
A quick and easy way to move your phone around the house or room to wherever you want it. Fitted with standard phone plug and socket. Commander system extension cables are also available. Ask at your local store.

3m	Cat F 9007	**$14.95**
5m	Cat F 9008	**$16.95**
10m	Cat F 9009	**$18.95**
15m	Cat F 9010	**$22.95**

Coiled Handset Cables
Fitted with modular plugs on both ends. They suit any phone with modular connectors.

3 Metre		
White	Cat F 2455	**$16.95**
Ivory	Cat F 2457	**$16.95**
Black	Cat F 2458	**$16.95**
8 Metre		
Black	Cat F 4981	**$22.95**
Ivory	Cat F 4980	**$22.95**



Extension Reel 4.5m
A smaller version of the 15 metre.
Cat F 2309
$16.95

Standard Plugs

Double Adaptor
Allows connection of 2 devices to one socket.
Cat F9002

$8.95

3 Way Outlet
Cat F9011 $9.95

Adaptor Plug BT – US
Reverse of F9777.
Cat F9123

$9.95

BT Plug
4 way line plug, fits standard phone cable.
Cat F9001

$4.95

Fax Break In Adaptor 1.5M
Product Description US plug to BT socket – used for connecting TAMS to faxes.
Cat F9013

$18.95

BT Socket – US Plug
Plugs into modular sockets and accepts a standard Telecom plug at the other end.
Cat F9777

$9.95

Telephone Cord Coupler
A double line socket for joining two standard BT plugs.
Cat F9774

$7.50

Modular Accessories

3 Way Modular Adaptor
Allows connection of 3 devices to one socket.
Cat F2581

$12.95

Privacy Switch
If you've got more than one phone and want to speak in private, this switch will ensure no one can listen in.
Cat F2804

$12.95

3 Way Modular Coupler
Ideal for answering machine, phone and fax modem.
Cat F2579

A91/83H/0397

$8.95

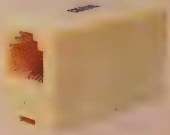
Message Stopper
Automatically switches off your answering machine when you pick up your phone.
Cat F2807

$12.95

Modular Double Adaptor
Allows connection of two devices to one modular socket.
Cat F2578

$8.95

Inline Coupler
A double line socket for joining two modular plugs.
Cat F2577



$9.95

Piggy Back Cable
190mm cable fitted with modular plugs on each end.
Cat F2510

$7.95

Modular Plug Packs
Modular plugs in handy packs of 5. They require the use of a Crimp Tool.

4-Pin/4	Cat F2575	$9.95pk
6-Pin/6	Cat F2574	$9.95pk
6-Pin/4	Cat F2576	$9.95pk
8-Pin/8	Cat F2573	$9.95pk

Modular Extension Leads
Fitted on both ends with US-style modular plugs.

5 metre	Cat F5096	$16.95
10 metre	Cat F5097	$19.95
15 metre	Cat F5098	$24.95
30 metre cable-only style (no modular plugs)	Cat F2410	$34.95

Modular Extension
5 metre cord.
Cat F2809

$18.95

Ericsson AH 618

Ericsson AH 618 NiMH 1200mAH Battery	E 0287	**$89**
Ericsson AH 618 Black Leather Case	E 0285	**$38.50**
Ericsson AH 618 Travel Battery Charger	E 0286	**$54.50**
Ericsson AH 618 Stubbie Antenna	E 3507	**$29**
Ericsson AH 618 Double Combo	E 0234	**$79**

Ericsson AF 778

Ericsson AF 778 NiMH 650mAH	E 0258	**$99**
Ericsson AF 778 Black Leather Case	E 0255	**$38.50**
Ericsson AF 778 Travel Battery Charger	E 0256	**$54.50**

Motorola Profile

Motorola Original 24 hr Standby – Charcoal Battery	E 5914	**$99**
MicroTAC NiMH 1100mAH – Black Battery	E 5313	**$89**
MicroTAC NiMH 600mAH – Black (slim) Battery	E 5314	**$99**
Motorola Battery All Flips 12hrs – Grey NiCad	E 5911	**$99**
Motorola Battery All Flips 24hrs – Grey NiCad	E 5912	**$89**
Motorola Lifestyle, Pizazz Leather Case	E 6270	**$38.50**
Standard Travel Battery Charger 12/24 volt	E 5306	**$54.50**

Motorola StarTAC

StarTAC NiMH 550mAH Battery	E 2611	**$99**
StarTAC Lithium Ion Battery	E 0281	**$139**
StarTAC Drop-In Black Leather Case	E 2621	**$38.50**
StarTAC Flip Black Leather Base	E 2620	**$38.50**
StarTAC Travel Battery Charger	E 2606	**$54.50**

***Phones not included with accessories**

Miscellaneous Accessories

Audiovox

Audiovox 401/405 NiMH 1100mAH Battery	E 4261	**$69**
Audiovox Travel Battery Charger	E 4256	**$54.50**
Audiovox 405 Antenna	E 4257	**$34.50**

Motorola

Motorola 650 & thin flips Blk Leather Case	E 5520	**$38.50**
Motorola 1100 Black Leather Case	E 5820	**$38.50**
Motorola Courier Black Leather Case	E 6120	**$38.50**
Motorola Original 24hr Standby – Charcoal	E 5914	**$99**
MicroTAC NiMH 1100mAH – Black	E 5313	**$89**
MicroTAC NiMH 600mAH – Black (slim)	E 5314	**$99**
Motorola Battery All Flips 12hrs – Grey Nicd	E 5911	**$99**
Motorola Battery All Flips 24hrs – Grey Nicd	E 5912	**$89**

Nokia 918

Nokia 918 NiMH 1200mAH Battery	E 0294	$89
Nokia 918 Black Leather Case	E 0295	$38.50
Nokia 918 Travel Battery Charger	E 0293	$54.50
Nokia 918 Combo Pack	E 0296	$79

Nokia 252

Nokia 252 NiMH 1200mAH Battery	E 0283	$99
Nokia 252 Original Vibrating Battery	E 0289	$149
Nokia 252 Black Leather Case	E 0282	$38.50
Nokia 252 Travel Battery Charger	E 0284	$54.50
Nokia 252 Combo Pack	E 0244	$79

Nokia 6120/5120

Nokia 6120/5120 NiMH 900mAH Battery	E 0310	$99
Nokia 6120/5120 Black Leather Case	E 0314	$38.50
Nokia 6120/5120 Travel Battery Charger	E 0311	$54.50
Nokia 6120/5120 Std Belt Clip	E 0313	$25

Philips

Philips ISIS NiCad 600mAH Battery	E 0216	$69
Philips ISIS NiMH 1500mAH Battery	E 0217	$99
Philips ISIS Black Case	E 0219	$38.50
Philips ISIS 12/24 Volt Travel Battery Charger	E 0218	$54.50

***Phones not included with accessories**

Miscellaneous Accessories

Nokia

Nokia 100/Gold 700mAH Battery	E 7411	$69
Nokia 100/Gold NiMH 1200mAH Battery	E 7413	$89
Nokia 100/121 NiCad 700mAH Battery	E 7112	$69
Nokia 232/NiMH 1100mAH Battery	E 7514	$99
Nokia 636/638 NiMH Battery	E 7564	$99
Nokia 636/Travel Battery Charger	E 7556	$54.50
Nokia 100/Gold/101 & 121 Ret. Ant.	E 7107	$34.50
Nokia 636/638 Fixed Original Antenna	E 7557	$34.50
Nokia 232 Retractable Antenna	E 7507	$34.50

Uniden

Uniden PCD1000 850mAH Battery	E 6803	$69

Specialty Product

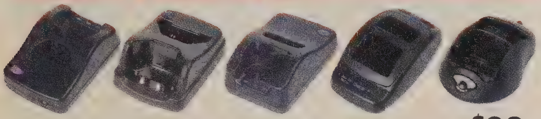
Nokia 5120 Xpress-on™ Front Covers

No other cellular phone lets you change the covers yourself! By choosing one of 7 exciting new metallic look covers you can change your phone to suit what you are wearing, your mood or your situation! So Easy... So Cool...The colours available are:

Antique Red	Cat E 2140	$39
Bermuda Blue	Cat E 2141	$39
Marlin Blue	Cat E 2142	$39
Shark Silver	Cat E 2143	$39
Tango Orange	Cat E 2144	$39
Island Yellow	Cat E 2145	$39
Gecko Green	Cat E 2146	$39

*Can also be used on Nokia 5110

Desktop Chargers



Ericsson AH618 Dual Slot Desk Top Charger	Cat E 0233	$99
Ericsson AF778 Dual Slot Desk Top Charger	Cat E 0236	$99
Nokia 918 Dual Slot Charger	Cat E 0298	$119
Nokia 252 Quick Desk Top Charger	Cat E 0243	$99
StarTAC Dual Slot Desk Top Charger	Cat E 2637	$109

How To Maintain Your Battery

When charging a brand new battery or recharging a battery that has not been used for several months, your charger may indicate that the battery has been fully charged after only a few minutes. At this point, do not stop the charging process but allow the charger another 10 hours before stopping the charge. The next time charging occurs it should take only the usual amount of time to charge (1-2 hours for fast chargers, 8-10 hours for regular charges). The battery will require between 3-5 charge/discharge cycles to achieve its rated capacity.

- Make sure the battery is fully charged before use.
- Charge overnight if new or unused for a long period of time.
- Clean the battery and terminals with a clean, soft dry cloth.
- The battery may be warm during use or recharging, this is normal.
- Total natural discharge may occur during long storage periods.
- Do not recharge a battery more than 3 times before fully recharging it.
- Never touch battery terminals.
- Take care not to drop the battery or subject it to strong shocks.
- Do not attempt to open the battery.

Suction Window Mount and Holder

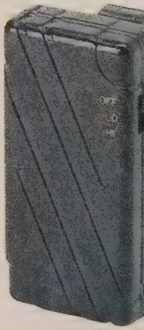
Stop fumbling for your phone in the car when it rings. This great holder attaches by suction to your windscreen. No need for adhesive or to drill holes. This suction mount holder also works really well in conjunction with handsfree units for a totally handsfree solution.
Cat E 3105

$3850

Analogue Vibe-Alert

Use this in conjunction with your cellular phone. They are ideal for those people in loud surroundings or anyone who has trouble hearing their phone ring. Vibe alert will vibrate to let you know your phone is ringing.
Cat E 3129

$5995



Please see your nearest
Dick Smith Electronics
store for more cellular accessories

Stay in touch, get Mobile with competitive rate plans

A mobile phone was once something that only "yuppies" used, they were expensive to buy and expensive to run, not to mention large and heavy in design. These days mobile phones are more than just a phone – they are now a necessary business tool and a lifeline for your lifestyle.

With the current range of different rate plans available through Telecom, your costs of running a mobile phone are more controllable and cost effective.

Styling of the phones has also come a long way, mobile phones are getting smaller, lighter and more user friendly in design. They can now fit easily into a pocket, a handbag, a glovebox or a toolbox, making them a true mobile phone.

At Dick Smith Electronics we have selected the highest quality, best value mobile phones from the leading manufacturers of mobile phone technology. We have a phone to suit your requirements be that to just pop in the glovebox in case of a breakdown or emergency, or to use for business, so you don't need to be in the office to still be in touch.

If you are unsure as to what rate plan or phone will suit you best, our experienced sales people are fully trained to ensure you get the right phone to suit your needs and ensure you are on the right rate plan so your phone doesn't cost you any more than it should.

In addition to being able to get you connected and get you mobile quickly, Dick Smith Electronics have a wide range of cellular accessories to help make getting mobile more enjoyable, experience the power and the pleasure of mobile communications in your hands.

***Phone models may alter throughout the year**

CONNECTING YOU TO

Telecom

NOKIA
Connecting People

MOTOROLA
Authorised Cellular Dealer

ERICSSON

2GO PREPAID Telecom NEW ZEALAND

Nokia 918
+ $50 Recharge Card
Cat E 0210
$149*

Ericsson 618
+ $75 Recharge Card
Cat E 0335
$149*

Motorola Profile
+ $50 Recharge Card
Cat E 0462
$129*

Philips ISIS
+ $50 Recharge Card
Cat E 0209*
$129*

What is GO PREPAID?

Do you want a mobile but don't want to sign a contract, or get a monthly bill, but want to be able to control what you spend? If the answer is yes then Telecom GO PREPAID is the mobile phone for you.

Prepaid means you can have the freedom of getting mobile without worrying about monthly bills or contracts, it is the easy way to get mobile. It is also an easy way to control what you spend on your mobile phone.

How does it work?

All you call costs are paid in advance via a Telecom 2 GO PREPAID Recharge Card, this card loads a dollar credit onto your account and allows you to make calls**

Topping up your account is easy and the minimum $20 top up every 60 days is a cheap way of staying in touch. Call into your local Dick Smith Electronics Store for your 2 GO PREPAID Recharge Card, and stay mobile.

Terms & Conditions

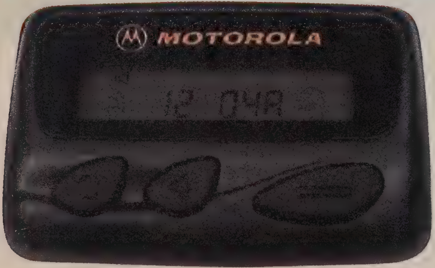
You must top up your call time every 60 days with a minimum of $20, it doesn't matter how much call time you have left you must top up by $20 every 60 days or you will lose your remaining airtime credit.

If you do not top up your GO PREPAID account at the end of a further 4 months the mobile phone will be disconnected and the phone number will be removed from the network.

Telecom GO PREPAID is an inexpensive way to get you, your family or friends mobile

*Phone models, retail pricing and card values will change throughout the year, phones subject to terms and conditions outlined above.
**You can also top up your Prepaid phone using your credit card.

Pagers



Motorola Bravo 100 Pager

Accepts coded numeric messages and telephone numbers. Stores up to 16 messages. Locks and protects special messages. Back light for night visibility. Auto alert or vibrate mode. Message time stamping. Unread message reminder alert.
Cat E 0229
$99

Creative adhesive backed labels for virtually any home, shop, office, school, work or personal application. Make good organisation a reality not a dream. Labels are easy and fun to make and a variety of different coloured tapes are available so you can colour code different types of items.

brother

P-Touch PT-85 Labelling Machine

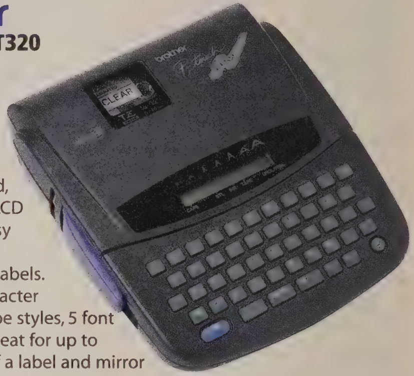
This helpful and handy palm-sized label maker provides labels on demand for schoolbooks, video cassettes, computer disks, frozen food... and so much more. With 9 type styles, 5 type sizes and bold, italic, text framing, underlining options.

Cat F 1613

$99

brother

P-Touch PT320 Labelling Machine



With a user friendly typewriter-style keyboard, 15 character LCD display for easy creation and amending of labels. With 300 character memory, 9 type styles, 5 font sizes, auto repeat for up to nine copies of a label and mirror printing for sticking labels to the insides of windows.

Cat F 1611

$199

P-Touch Tapes

Brother PT 15

White on Black Laminated 9mm	TC-395	Cat F 1502	$29.95
Black on Clear Laminate 12mm	TC-101	Cat F 1503	$29.95
Black on White Laminated 12mm	TC-201	Cat F 1506	$29.95

Brother PT 85/100

Black on Blue 9mm	M521	Cat F 1601	$19.95
Black on Gold 9mm	M821	Cat F 1603	$19.95
Black on Silver 9mm	M921	Cat F 1604	$19.95
Black on White 9mm	M-K221	Cat F 1634	$19.95
Black on White 12mm	M-K231	Cat F 1635	$19.95

Brother PT 320/540

Black on White 6mm	TZ-211	Cat F 1630	$39.95
Black on Clear 9mm	TZ-121	Cat F 1680	$39.95
Black on Yellow 9mm	TZ-621	Cat F 1681	$39.95
Gold on Black 9mm	TZ-324	Cat F 1670	$39.95
Black on White 9mm	TZ-221	Cat F 1631	$39.95
Black on White 12mm	TZ-231	Cat F 1683	$39.95
Black on Fluro Yellow 12mm	TZ-C31	Cat F 1666	$39.95
Red on White 12mm	TZ-232	Cat F 1689	$39.95
Black on Clear 18mm	TZ-141	Cat F 1636	$45.95
Gold on Black 18mm	TZ-344	Cat F 1668	$45.95
Black on Yellow 18mm	TZ-641	Cat F 1669	$45.95
Black on White 18mm	TZ-241	Cat F 1685	$45.95
White on Red 24mm	TZ-455	Cat F 1684	$45.95

brother

P-Touch VIP Card

Buy 9 tapes and get the 10th FREE!

Come into any of our stores and ask for a P Touch VIP Card. Each time you purchase a tape TZ for the 320, or MK tape for the P100, we will note your purchase on your card – and when you have bought 9 tapes, we'll give you your 10th tape for free(tapes TZ or MK cannot be mixed for giveaways).

Cat F 1601 – F 1684

brother

GX6750 Typewriter

This is a sturdy and highly featured typewriter perfect for the office. Includes auto "word out" correction, auto underline, bold, right margin flush, variable pitch and line indent.
Cat F 9890

$199

NEW FOR '99

Dahle Personal Cross Cut Shredder

For small or home office, this shredder is ideal for confidential documents.
Cat F 1334

$199

Typewriter & WP Ribbons

Brother PY80 Typewriter Ribbon	15 Pages	F 1662	**$7.75**
Brother Carbon Ribbon AX325, WD800 & 1700, GX6750	15 Pages	F 0819	**$12.95**
Brother Corrector for Carbon Ribbon		F 0822	**$6.50**
Brother Nylon Ribbon AX325, WD800 & GX6750	100 Pages	F 0726	**$22.95**
Brother Cover Up for Nylon Ribbons		F 0725	**$9.95**
Non Original for Brother Series	15 Pages	F 1084	**$7.50**
Canon Starwriter 25 Ribbon (pk 2)	20 Pages /ribbon	F 9057	**$23.95**

Inkjet Cartridges

Brother Colour WP6500J/530/550	up to 200 pages	F 1623	**$78.50**
Brother Mono Cartridge	up to 1000 pages	F 1624	**$62.95**

Miscellaneous Accessories

Brother PY80 AC Adaptor		F 1663	**$33.00**
Brother Powernote Carry Case		F 1621	**$37.90**
Brother Powernote Battery		F 1619	**$99.00**
Brother Clip Art for 530/550/300B		F 9356	**$89.00**
Brother Clip Art for 530/550/300A		F 9357	**$89.00**
Canon FC220 Copier Original Toner Cartridge		F 9960	**$285.00**
Canon FC220 Copier Remanufactured Toner Cartridge		F 9961	**$210.00**
Sharp Z25/26 Copier Cartridge	2000 pages	F 9355	**$149.00**

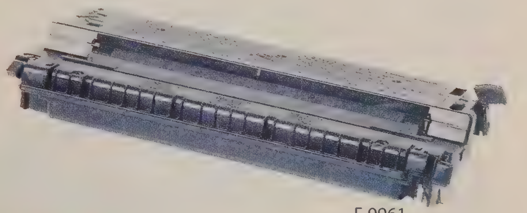
NEW FOR '99

Canon

FC220 Personal Copier

Zero warm up time for instant copies. Auto shut off saves energy. Complete portability with built in carry handle. Copies A4 to postcard size. Automatic exposure for clean copies every time. 50 sheet paper feed tray saves time and trouble. Unique all-in-one cartridge for virtually maintenance free performance.
Cat F 9955

$799



F 9961

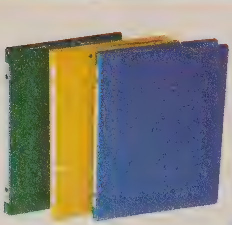
Canon

FC220 Accessories

Always have a spare toner cartridge at the ready for those important copying jobs.

Original Toner Cartridge	Cat F 9960	**$285**
Remanufactured Tone Cartridge	Cat F 9961	**$210**

Fax Accessories



Fax Files

Available in assorted colours. No need to be confused again, sort out your incoming and outgoing with these simple fax files.

Cat F 0901

$3.95 ea

Fax Cleaning Kit

Look after your fax machine with this extensive cleaning kit.

Cat F 0888

$29.95 ea

MODEM, FAX OR PHONE
SATURN Telephone Accessories
SmartRing+ Ring decoder
Telecom FaxAbility
TELEPERMIT PTC 210/97/006
Made in NZ
LINE

Saturn Smartring Ring Decoder

Allows you to have a new and separate telephone number for your modem, fax and other phones on the same line. You can have FaxAbility without having to upgrade your old fax. Easy installation, powered by phone line and comes with 0800 support line help.

Cat F 9911

$99.95

Fax Paper

Fax Paper

Buy by the box and save $$$$

30 Metre Roll
Cat E 0170 **$4.50 ea**
Buy a box (12 rolls) $48 Save $6

50 Metre Roll
Cat F 0836 **$7.95 ea**
Buy a box (12 rolls) $84 Save $11.40

20 Metre Roll
Cat F 0959 **$6.95**
Rolls only available individually

brother

"Anticurl" Thermal Paper

Made specifically for the Brother thermal machines these high quality rolls will give you high quality print with no curl, documents look like they have come in on a plain paper machine.

Thermaplus 30m Rolls Pack 2 Cat F 0937	**$24.95**
Thermaplus 50m rolls Pack 2 Cat F 0808	**$29.95**

PC Links

brother

Multi Function Link

Allows you to connect your Brother compatible fax machine to your PC. (Compatible with Brother 520, 920, 930 and 8000P).

Cat F 0125

$199

multi-function link
NEW
multi function link
EASY TO INSTALL! EASY TO USE!
brother
multi-function link

Plain Paper Accessories

brother

Ribbon Cartridge for 950M, PC-95			
Cat F 0802	Approx. 400 pages		**$49.95**
Ribbon for 1200P, PC-101			
Cat F 0818	Approx. 700 pages		**$59.95**
Ribbon for 1020/30, PC-201			
Cat F 0127	Approx. 420 pages		**$39.95**
Roll for 920/30, PC-301			
Cat F 9933	Approx. 235 pages		**$39.95**
Twin Pack Roll for 920/30, PC-302			
Cat F 9932	Approx. 235 pages x 2		**$64.95**
Black Cartridge for 7160, FA.LC02BK			
Cat F 9956	Approx. 750 pages @ 5%		**$39.00**
Cyan Cartridge for 7160, FA.LC02C			
Cat F 9957	Approx. 400 pages @ 5%		**$21.00**
Magenta Cartridge for 7160, FA.LC02M			
Cat F 9958	Approx. 400 pages @ 5%		**$21.00**
Yellow Cartridge for 7160, FA.LC02Y			
Cat F 9959	Approx. 400 pages @ 5%		**$21.00**
Toner Cartridge for 8000P, TN-200			
Cat F 0861	Approx. 2200 pages		**$59.95**

Canon

Mono Cartridge for B150, BX3		
Cat F 9054	Approx. 1000 pages @ 2.5%	**$69.95**
Mono Cartridge for MPC20, BC20		
Cat X 5489	Approx. 900 pages @ 5%	**$78.95**
Mono Cartridge for MPC20, BCI21BK		
Cat X 5707	Approx. 225 pages @ 5%	**$19.45**
Colour Cartridge for MPC20, BCI21 Colours		
Cat X 5708	Approx. 225 pages @ 5%	**$34.95**

Panasonic

Twin Pack Ribbon for KX-1110, KXFA136A		
Cat F 9362	Approx. 330 pages x 2	**$89.95**

SHARP

Ribbon for 1450/1650, FO16CR		
Cat F 9872	Approx. 660 pages	**$46.95**
Ribbon for 1460/1660, FO15CR		
Cat F 0872	Approx. 470 pages	**$39.95**

Fax Facts

A fax machine is proving to be a necessity in New Zealand homes and is a must in an office environment. Fax machines give you quick and easy access to all sorts of information be it a budget faxed through from your office when you are working from home, a menu faxed through from your local restaurant, a quote from your local building, or can be used simply to keep in touch with friends, family or business colleagues in other parts of New Zealand or overseas.

Faxes are now a way of life and it is proving increasingly difficult to communicate without one. They are certainly a faster form of communication than a letter, or a courier and mean you can send or receive information very easily.

Dick Smith offer our customers an extensive range of fax machines from thermal through to plain paper machines plus multifunction centres. What is the difference? Thermal machines use thermal technology and print onto rolls of thermal paper, we offer basic models of thermal faxes through to thermal faxes with built in answer machines.

Plain paper faxes on the other hand are growing quickly in popularity, the reason for this is that the fax is received on plain paper which doesn't fade over time like thermal, this means plain paper faxes are ideal for information being transmitted that must be stored or kept.

In addition to the thermal and plain paper faxes featured in this catalogue we also range multifunction centres which perform a range of tasks, they can scan, print, send and receive faxes, copy plus more...

For those customers looking for a more commercial machine we have a range of laser plain paper faxes available on a customer order only basis. Please see instore for details.

Why buy at Dick Smith Electronics?

We offer a very strong range of brands and models, plus we sell a full range of fax accessories from paper through to replacement cartridges, all the accessories you are likely to need. Dick Smith are your one stop fax shop.

In addition for those customers who are dependent on their fax machines a number of our larger stores carry loan faxes for our customers convenience. (Subject to availability and requires a credit card swipe as security for the duration of the loan).

Thermal Faxes

YES – YOU CAN PUT DOWN $50
Pay the rest over 6 months interest FREE
through Telecom. Subject to credit approval.

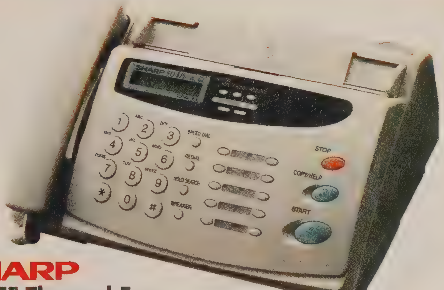
brother Telecom Home Fax 2

Thermal fax, phone, copier all in one compact unit. 50 speed dials with alpha tagging, approx 15 sec transmission speed, 3 1-touch speed dials, Telecom Caller Display* and FaxAbility* compatible, dedicated Call Minder* and Call Waiting* access buttons.

Cat F 9940

* Services charged on your monthly Telecom account and are dependent on area availability.

$349



SHARP
FO-375 Thermal Fax

Small, compact design with automatic paper cutter, 50m thermal roll, 30 number automatic dialer = 10 1-touch and 20 speed dials, approx 15 sec transmission speed, 10 sheet auto document feeder, anticurl mechanism.

Cat F 0874

$349

Panasonic Compact Fax KX-FT33

Compact fax, phone and copier for personal, home or family use. Unique jog dial for easy access to the 100 name and number phone directory, 10 pg document feeder, automatic paper cutter, approx 15 second transmission speed per page.

Cat F 9938

$399

Also available:
With Built-In Answer Machine Cat F 9937 **$499**

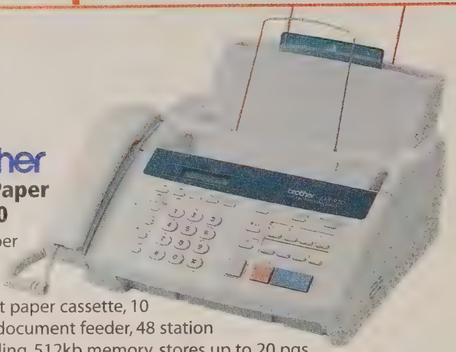
brother
Message Centre 520 with Answer Phone

Thermal fax with built-in answer machine, 5 personal mail boxes, fax forwarding and remote fax/voice retrieval, 10 pg feeder, 20 pg out of paper memory, 55 memories, handsfree speaker phone.

Cat F 0862

$429

Plain Paper

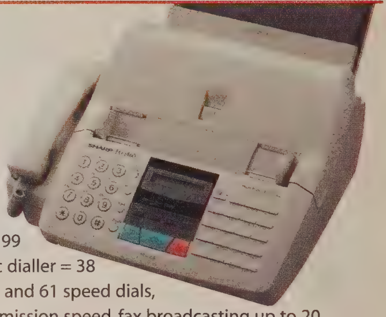


brother

Plain Paper Fax 920

Plain paper fax machine, 100 sheet paper cassette, 10 pg auto document feeder, 48 station auto dialling, 512kb memory, stores up to 20 pgs for broadcasting.
Cat F 9925

$499

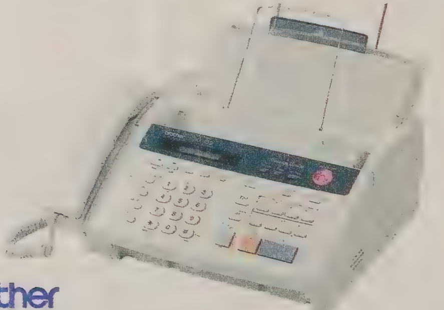


SHARP

1460 Plain Paper Fax

Plain paper fax, phone and copier, 99 number automatic dialler = 38 1-touch memories and 61 speed dials, approx 9 sec transmission speed, fax broadcasting up to 20 locations, 20 sheet auto document feeder, 200 sheet capacity.
Cat F 0871

$449

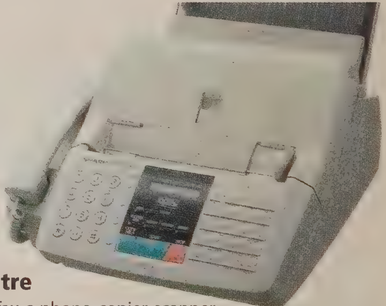


brother

Plain Paper Fax and Message Centre 930

Plain paper fax with built in answer machine, 100 sheet paper cassette, 10 pg auto document feeder, 48 station auto dialling, 512kb memory, stores up to 20 pgs for broadcasting.
Cat F 9923

$599



SHARP

1660 Plain Paper - Multi Function Centre

More than just a fax, a phone, copier, scanner, printer, PC fax – all OCR software is provided on CD ROM, 99 number automatic dials, approx 6 sec transmission speed with 14.4kb modem, 200 sheet paper capacity, fax broadcasting up to 20 locations, low running costs (6 cents per copy).
Cat F 9924

$599

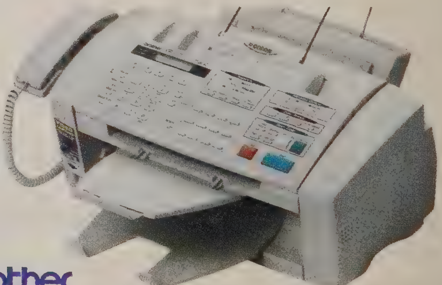
Canon Telecom ImageMaker MPC20

Colour bubblejet printer with black and white scanner, black and white copier (with reduction facility), PC Fax and Plain Paper Fax – all in one neat package. Also Telecom FaxAbility*, Call Minder* and Call Waiting* compatible.
Cat F 9942

$799

YES – YOU CAN PUT $199 DOWN

Pay the rest over 6 months interest FREE through Telecom.
Subject to credit approval.



brother

7160 Multi-Function Centre

Plain paper fax, with colour printer, scanner, copier, PC fax plus video capture function. 14.4kb fax modem, fax broadcasting, 124 station auto dialling, simultaneous operation – send/receive while printing. Fantastic machine for the small/home office.
Cat F 9954

$1125

*Telecom Smart Services charged on your monthly Telecom account and are dependent on area availability.

HP OFFICEJET ALL-IN-ONE

HEWLETT PACKARD

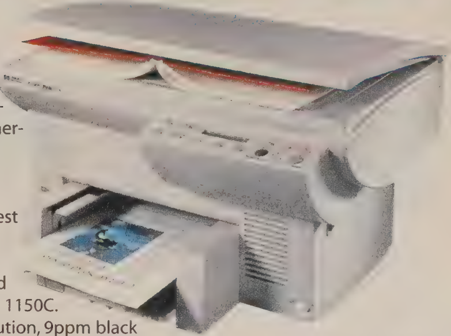
OfficeJet 725

Why just print in colour when you can completely communicate in it? The HP OfficeJet Series 700 prints, faxes, scans and copies all in colour. Full featured plain paper fax with new colour faxing. Scan-to-email to quickly send colour documents to any email address. Convenient, full colour copying. Print up to 5ppm black and 2ppm colour for great productivity.

Cat XP9001 **$1199**

HEWLETT PACKARD

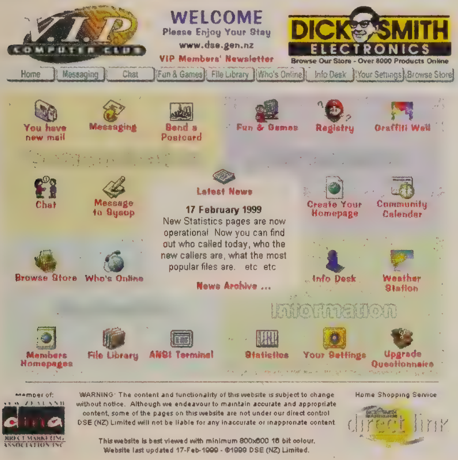
OfficeJet 1170



The new OfficeJet Pro 1170C Series it the latest All-In-One, easy-to-use colour printer-copier-scanner-communicator that provides professional quality and performance. The OfficeJet Pro 1170C Series incorporates HPs latest technology advancements to provide photo-quality images on any paper. It also prints, copies and scans faster than the OfficeJet Pro 1150C. Features 600 x 600 dpi print resolution, 9ppm black and 5ppm colour printing, 9ppm black and 3ppm colour copying, 300dpi optical/1200dpi enhanced scanner resolution.

Cat XP0052 **OfficeJet 1175 with Autosheet Feeder** Cat XP0051 **$1949** **$1499**

Receive 12 Months FREE VIP Access and 10% Discount Off Software


V.I.P COMPUTER CLUB
WELCOME
Please Enjoy Your Stay
www.dse.gen.nz
VIP Members' Newsletter
DICK SMITH ELECTRONICS
Browse Our Store - Over 8000 Products Online
Home
Messaging
Chat
Fun & Games
File Library
Who's Online
Info Desk
Your Settings
Browse Store
You have new mail
Messaging
Send a Postcard
Fun & Games
Registry
Graffiti Wall
Chat
Message to Sysop
Latest News
Create Your Homepage
Community Calendar
Browse Store
Who's Online
News Archive ...
Info Desk
Weather Station
Information
Members Homepages
File Library
ANSI Terminal
Statistics
Your Settings
Upgrade Questionnaire
member of:
NEW ZEALAND DMA DIRECT MARKETING ASSOCIATION INC
Home Shopping Service
direct link

17 February 1999
New Statistics pages are now operational. Now you can find out who called today, who the new callers are, what the most popular files are. etc etc

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Obtain **FREE** membership by purchasing $100 worth of computer products from Dick Smith Electronics, or pay a $20 membership fee. Your VIP Computer Club membership entitles you to receive:

- Regular newsletters with information and special offers.
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  - Your own Internet e-mail address for sending and receiving Internet e-mail! Send virtual postscards, browse the on-line store, and even publish your very own Internet Homepage.
  - Meet others in chat rooms, write on the virtual graffiti wall, post upcoming events on the community calendar and participate in selected Internet newsgroups.
  - Be entertained with our on-line games.
  - Check out Auckland's weather, or explore our library of thousands of downloadable shareware software titles.

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FASTER ANSWERS
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- 30 Consecutive Days Support from first call
- Valid within 12 months of purchase
- Excludes Educational & Games Support
- Single user only

Cat XH8604 **$39**

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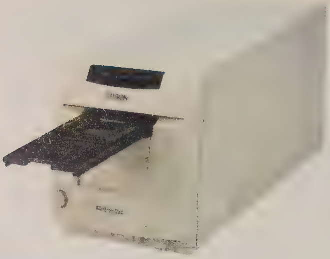
- Supports all ActionCall 0800 software products. ***PLUS*** over 600 **games & educational software** titles
- Calls cost $2.75 per minute plus GST
- Children ask your parents first

Per minute+GST **$2.75**

Immediate Computer Help–Just a Phone Call Away!



EPSON

Filmscan 200

Scan 35mm positive and negative slides directly into your computer. Convenience of continuous batch scanning.

Cat X 9509

$1049

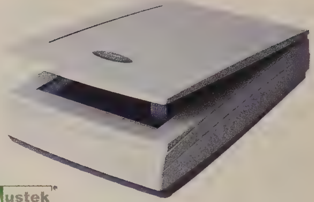
Canon

Canoscan FB320

Using a new, patented technology called LIDE (LED Indirect Exposure), Canon has fundamentally changed the way scanners work, and their price/performance ratio. LIDE eliminates the need for complex costly optical mirrors in image acquisition, while it maintains superior image quality and colour clarity.

Cat XH 1526

$249



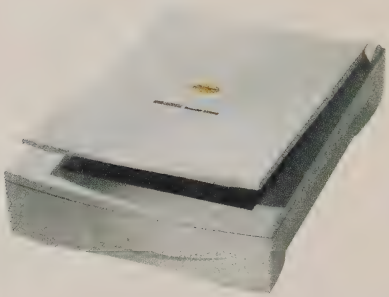
Mustek

Scanner 1200 III EP

The Plug-n-scan 1200 III EP is a complete 36-bit colour scanning system, which includes the tools needed to scan photographs, logos, illustrations and text. The 1200 III EP includes image editing and photo-retouching software as well as optical character recognition software.

Cat XH 1539

$229



HEWLETT PACKARD

ScanJet 3200

Hewlett Packard's easiest-to-learn, complete scanning solution for the cost-conscious customer. Fast, trouble-free installation gets you scanning in minutes. Easy parallel port connection shared with your printer's port. Less than 2.5 minutes to OCR full page text into Microsoft Word! 30-bit, 600x 1200 optical resolution.

Cat XH 1535

$299

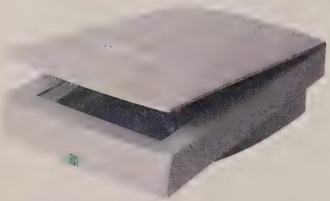
HEWLETT PACKARD

ScanJet 4200

Easy USB installation. Less than 2 minutes to OCR full page text into Microsoft World. 36-bit, 600x1200 optical resolution.

Cat XH 1534

$399



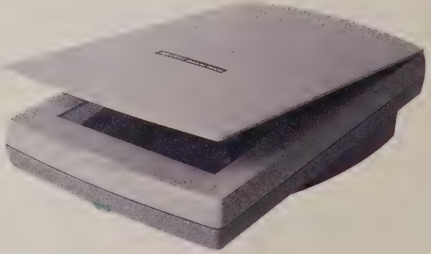
HEWLETT PACKARD

ScanJet 5200

Convenient parallel or USB installation. Less than 90 seconds to OCR full page text into Microsoft Word. 36-bit, 600x1200 optical resolution.

Cat XH 1536

$499



HEWLETT PACKARD

ScanJet 6200/6250

A complete scanning solution for business professionals. Includes adaptor for scanning 35mm slides. 6250 includes automatic 25 page document feeder for hassle-free scanning. 36-bit, 1200dpi supersampling. Supports USB or SCSI interface (SCSI card and cable required).

Cat XH 1520

6250 with Document Feeder Cat XH 1519 **$1095**

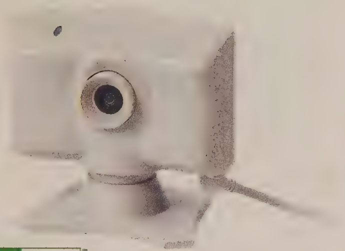
$849

LOGITECH

Quickcam Home

Capture colourful full motion video and sharp still images. Send photos or video e-mail. Ideal for Internet video conferencing.
Cat XH4651

$299

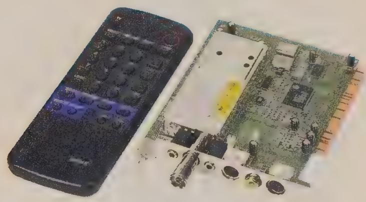


Mustek
TOTAL SCANNING SOLUTION

Vcam 300

Capturing video clips and images has never been easier. The Vcam 300 also makes video conferencing a breeze.
Cat XH4680

$229



TView

TV tuner and capture card. Full screen or window. Enhanced teletext. Includes remote control. Supports video conferencing.
Cat XH6555

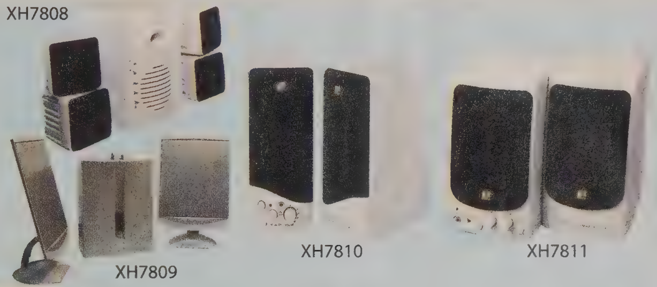
$179

iomega

Buz Multimedia Producer

Capture video to your PC, edit your existing VHS tapes, add text and other special effects to make good videos great ones!
Cat XH4610

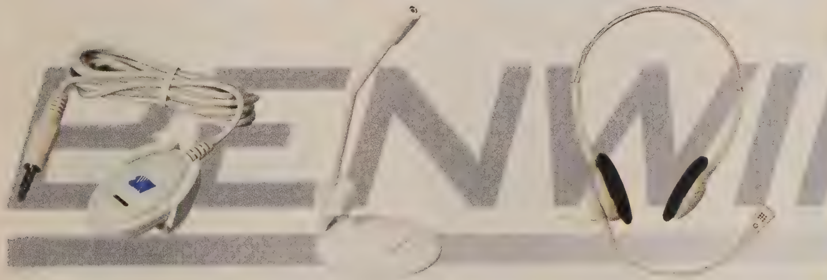
$499



BENWIN™
Acoustic Edge Series

Benwin	**BWS-30**	Cat XH7808	**$169.95**
Benwin	**BWS-2000**	Cat XH7809	**$299**
Benwin	**FX1-3D**	Cat XH7810	**$59.95**
Benwin	**FX2-3D**	Cat XH7811	**$79.95**

Experience the new shape of sound with Benwin multimedia speakers. Including the revolutionary BWS2000 flat panel speaker. Whether you are after an entry level speaker or a great looking (and sounding) flat panel – Benwin has something for everyone.



Benwin Lapel Microphone

Uni-directional
Cat XH4665

$18.95

Benwin Desktop Microphone

Slimline design. Suits most PC sound cards.
Cat XH4663

$18.95

Benwin Headset Microphone

Built-in volume control.
Cat XH4662

$24.95

Benwin Internet Microphone

Built-in volume control. Noise reduction.
Cat XH4664

$39.95

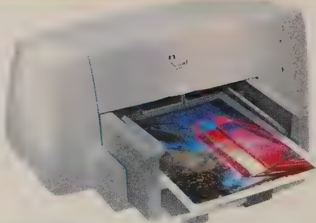
HEWLETT PACKARD DeskJet 420

Easy set-up and simple use. Single print head. Space saving design.
Cat XC 9920

$199

Also available:

51626A Bk Cart	Cat X 0743	**$73.95**
51626G Bk Cart	Cat XH 2050	**$46.95**
51625A Col Cart	Cat X 0744	**$74.95**



HEWLETT PACKARD DeskJet 695

Dual cartridge with Hewlett Packard Coloursmart II technology. IMac compatible with optional Hewlett Packard IMac interface kit.
Cat XP 0054

$319

Also available:

Imac Interface Kit	Cat XH 3219	**$189**
51629A Bk Cart	Cat X 6532	**$69.95**
51629G Bk Cart	Cat XH 2051	**$46.95**
C1816A Photo Cart	Cat X 4522	**$79.95**
51649A Col Cart	Cat X 6566	**$69.95**

HEWLETT PACKARD DeskJet 710

Photo quality colour on any paper with Hewlett Packards PhotoREt II technology. Fast 6ppm black and 3ppm colour printing. Dual cartridge with Hewlett Packard Coloursmart II technology.
Cat XP 4020

$399

Also available:

51645A Bk Cart	Cat X 6565	**$69.95**
51645G Bk Cart	Cat XH 2052	**$49.95**
C1823A Col Cart	Cat XH 2031	**$81.95**

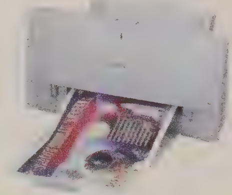
Canon BJC255SP

Super economy mode. Optimised internet printing. Add optional scan head for scanning, faxing and copy functions.
Cat XP 0043

$249

Also available:

Optional Scan Head	Cat XP 2008	**$199**
BC20 Bk Cart	Cat X 5489	**$78.95**
BC21e Col Cart	Cat X 5852	**$99.95**



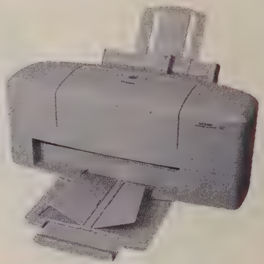
Canon BJC4310

Super economy mode for low-cost colour and black and white printing. Print up to 3,600 black and white pages with single BC20 cartridge. Add optional scan head for scanning, faxing and copy functions.
Cat XP 5021

$299

Also available:

Optional Scan Head	Cat XP 2008	**$199**
BC20 Bk Cart	Cat X 5489	**$78.95**
BC21e Col Cart	Cat X 5852	**$99.95**



Canon BJC5000

New dual cartridge system enhances speed and performance. Suits every paper needed up to A3. Up to 1440 dpi, dual drop size.
Cat XP 5023

$699

Also available:

BC-23 Bk Cart	Cat XM 0026	**$74.95**
BC21e Col Cart	Cat X 5852	**$109**

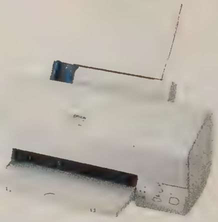
EPSON Colour 440

Dual cartridge affordable photo quality printing. Features EPSON's perfect picture imaging system with AcuPhoto half toning. Imac compatible with optional Imac kit.
Cat XP 6004

$299

Also available:

S020187 Bk Cart	Cat XH 2053	**$43.95**
S020191 Col Cart	Cat XH 2055	**$58.95**



EPSON Colour 640

Dual cartridge, 1440 and 720 dpi and up to 5ppm black, 3.5ppm colour. Features EPSON's perfect match imaging system and AcuPhoto half toning. Imac compatible with optional EPSON Imac kit.
Cat XP 6005

$399

Also available:

S020187 Bk Cart	Cat XH 2053	**$43.95**
S020191 Col Cart	Cat XH 2055	**$58.95**

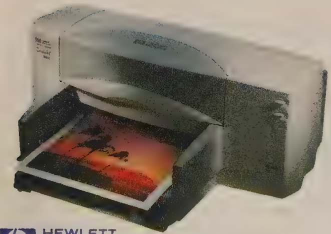
EPSON Colour 740

Dual cartridge printer featuring Micro Piezo technology for even smaller ink droplets. Up to 6ppm black and 4.5ppm colour. Supports parallel port, Mac 8 pin mini serial and USB ports.
Cat XP 6006

$629

Also available:

S020189 Bk Cart	Cat XH 2054	**$57.95**
S020191 Col Cart	Cat XH 2055	**$58.95**



HEWLETT PACKARD DeskJet 880

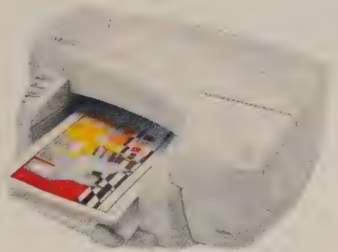
Fast 8ppm black and 5ppm colour. Brilliant photo quality with Hewlett Packard's PhotoRET II and ColourSmart II technology. Supports both bi-directional parallel and USB ports.

Cat XP 9002

$639

Also available:

51645A Bk Cart	Cat X 6565	**$69.95**
51645G Bk Cart	Cat XH2052	**$49.95**
C1823A Col Cart	Cat XH2031	**$81.95**



HEWLETT PACKARD DeskJet 2000

Business performance with stunning print speed of up to 10ppm in both black and colour. Brilliant photo quality with Hewlett Packard's PhotoRET II and ColourSmart II technology. Huge 5,000 page monthly duty cycle.

Cat XP9000

$1599

HEWLETT PACKARD DeskJet 1100/1100A

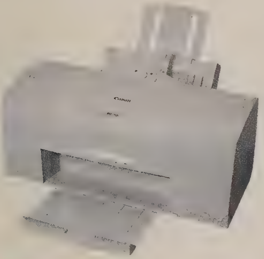
Stunning 8ppm print speed at 600dpi. 1100A supports copy and scan functions. 300dpi scanning and 8ppm copying.

Cat XP 7005

$879

Also available:

LaserJet 1100A	Cat XP7011	**$999**
C4092A Toner	Cat XM0007	**$139.95**



Canon BJC7100

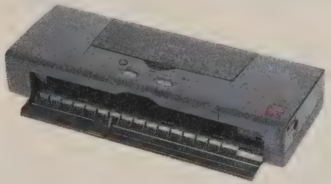
Pre-coats plain paper. 7 colour process. Prints up to 1200dpi. 90 times colour combinations, 25 tonal levels.

Cat XP 5024

$799

Also available:

BC60 Bk Cart	Cat XH2012	**$99.95**
BCI-61 Col Cart	Cat XH2014	**$64.95**
BCI-62 Col Cart	Cat XH2026	**$74.95**



Canon BJC50

Super portable at approximately half the size of an A4 sheet of paper. Weighs only 900grams including the battery (included with purchase). Add optional scan head for scanning, faxing and copy functions. Wireless infrared printing supported.

Cat XP 0053

$769

Also available:

Optional Scan Head	Cat XP2004	**$199**
BCI-IIBK Blk Cart	Cat X 5724	**$24.95**
BCI-IIC Col Cart	Cat X 5719	**$33.95**

HEWLETT PACKARD LaserJet 2100 Series

Versatile laser printer for small work groups and individuals with advanced printing needs. 1200 x 1200dpi at up to 10ppm with 2 paper trays.

Cat XP7006

From $1539

Also available:

C4096A Toner	Cat XM 0024	**$199**

EPSON Colour 900

The fastest inkset printer in its class with an amazing 12ppm – one page every 5 seconds. Micro Piezo technology for even smaller ink droplets. Multi protocol switching via Parallel, Serial and USB port.

Cat XP 6010

$999

Also available:

T003011 Bk Cart	Cat XM0021	**$79.95**
T005011 Col Cart	Cat XM0022	**$96.95**

EPSON Photo 1200

Delivers 1440dpi, full-bleed A3 prints with ink droplets invisible to the naked eye. Drivers for Windows9x, NT 4.0, Mac and Imac systems with Parallel, Serial and USB interfaces.

Cat XP 6011

$1199

Also available:

S020187 Bk Cart	Cat XH2053	**$44.95**
T001011 Col Cart	Cat XM0023	**$54.95**

HEWLETT PACKARD LaserJet 4000 Series

At up to 17ppm at 1200 dpi, this is an ideal printer for small, medium and large workgroups. Huge 600 sheet paper tray, 4Mb memory and 65,000 page monthly duty cycle.

Cat XP0042

From $2695

Also available:

C4127x 10,000 Page Toner	**$289**
C4127 6,000 Page Toner	**$189**

HEWLETT PACKARD

* Quezze and Save refill Kits recycle your old cartridge.
* 100% compatible with quality Inks
* Easy quick and no fuss instructions
* Print sharp & clear, clog free with strong bright colour

Original		SAVE $$$ with calidad InkJet Cartridges & Refil Kits						Hewlett Packard Printer Model														
HP No	Cat No	Calidad Cartridge	Black Refill Kit	Colour Refil Kit	Colour Refil Kit	Colour Refil Kit	Trio Refill K	DJ/DJ Plus	DJ Portable	DJ320/340	DJ400/420	DJ500/520	DJ540/550/DW5600	DJ600/660/670	DJ690/692/695	DJ710/720	DJ820/850/870	DJ880/890/895/1120	OJ635	OJ725	OJ1150	OJ1170/1175
51625A	X0744	Third party replacement cartridges are not available for HP printers - refill kits only.	—	X5944 913-CY	X5945 913-MG	X9546 913-YL	916-TRIO			●	●		●									
51626A	X0743		X5951 911-BK	—	—	—	—	●			●	●	●									
51626G	XH2050		X5951 911-BK	—	—	—	—	●			●	●	●									
51629A	X6532		X3429 916-BK2	—	—	—	—							●	●				●	●		
51629G	XH2051		X3429 916-BK2	—	—	—	—							●	●				●	●		
51633A	X1039		X9543 910-BK	—	—	—	—		●													
51641A	X6564		—	X3436 918-CY	X3437 918-MG	X3438 918-YL	918-TRIO										●				●	
51645A	X6565		X3439 918-BK	—	—	—	—									●	●	●			●	●
51645G	XH2052		X3439 918-BK	—	—	—	—									●	●	●			●	●
51649A	X6566		—	X3441 917-CY	X3443 917-MG	X3444 917-YL	916-TRIO							●	●				●	●		
C1816A	X4522		—	—	—	—	—								●					●		
C1823A	XH2031		—	XM???? 919-CY	XM???? 919-MG	XM???? 919-YL	919-TRIO									●		●				●
C4583A	X4521		—	—	—	—	—								●							

EPSON

With Calidad Replacement Cartridges you can save up to 60%.

* Print sharp & clear, clog free with strong bright colour
* 100% compatible with quality US Inks
* Easy, fast & no-fuss installation
* Same life as origonal cartridge.

Original		SAVE $$$ with calidad InkJet Cartridges & Refil Kits						EPSON Printer Model															
Epson No	Cat No	Calidad Cartridge	Black Refill Kit	Colour Refil Kit	Colour Refil Kit	Colour Refil Kit	Trio Refill K	Colour 400, 800, 1000	Colour, Colour Pro, Colour Pro XL	Colour 200, II, IIs, 820	Colour 1500, II, IIs, 820	Colour 1520, 800, 850	Colour 500, Photo, Photo 700, EX	Colour 200, 500	Colour 1520, 800, 850	Photo, Photo 700, Photo EX	Colour 300	Colour 440, 640, 750, Photo 1200	Colour 740	Colour 440, 640, 740	Photo 1200	Colour 900	Colour 400, 600
S020025	X3197	X5873 951-BK	X2937 950-BK	—	—	—	—	●															
S020034	X4781	X5874 952-BK	—	—	—	—	—		●														
S020036	X4782	X5875 952-COL	—	953-CY	953-MG	953-YL	966-TRIO		●														
S020047	X6495	X5876 955-BK	X3422 956-BK	—	—	—	—			●													
S020049	X6494	X5877 955-COL	—	X3423 956-CY	X3424 956-MG	X3425 956-YL	966-TRIO				●												
S020089	X7799	XH2001 960-COL	—	961-CY	961-MG	961-MG	966-TRIO					●											●
S020093	X4329	X9365 958-BK	959-BK	—	—	—	—						●										●
S020097	X4328	X9366 958-COL	—	959-CY	959-MG	959-YL	966-TRIO							●									
S020108	X8318	XH2000 960-BK	961-BK	—	—	—	—								●								
S020110	X7397	XH2045 962-COL	—	—	—	—	—									●							
S020138	X7539	XH2046 963-FC	966-BK	—	—	—	966-TRIO										●						
S020187	XH2053	XM0020968-BK	966-BK	—	—	—	—											●					
S020189	XH2054	XM0019 967-BK	966-BK	—	—	—	—												●				
S020191	XH2055	XM0012 968-COL	966-BK	—	—	—	966-TRIO													●			
T001011	XM0023	—	—	—	—	—	—														●		
T003011	XM0021	—	—	—	—	—	—															●	
T005011	XM0022	—	—	—	—	—	—															●	

Canon

With Calibad Trio Refill Kits you can save up to 75%

* Handy 3-n-one pack enables you to refill each colour seperately
* Easy to identify color coded packaging
* Print sharp & clear, clog free with strong bright colour

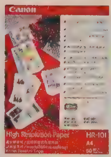
Original		SAVE $$$ with calidad InkJet Cartridges & Refil Kits						Canon Printer/Fax Model													
Canon No	Cat No	Calidad Cartridge	Black Refill Kit	Colour Refil Kit	Colour Refil Kit	Colour Refil Kit	Trio Refill K	BJ10, BJ20, FAX B200	BJ220/EX, BJ230	BJ210	BJ210SP	BJ240/255SP	BJC4000/4100/5500	BJC4200/4550	BJC4300/4310SP/4650	BJC7000	BJC7100	BJC50/BJC80	FAX MPC20	FAX MPC30	FAX B-100, 150
BC-01	X3233	—	930-BK	—	—	—	—	●													
BC-02	X5586	—	930-BK	—	—	—	—		●	●	●	●									
BC-03	XH2008	—	943-BK	—	—	—	—			●	●	●									
BC-05	X2193	—	—	942-CY	942-MG	942-YL	942-TRIO			●	●	●									
BC-06	X7430	—	—	—	—	—	—					●									
BC-09F	X7557	—	—	—	—	—	—			●	●	●									
BC-10	X5320	940-BK	—	—	—	—	—											●			
BC-11e	XH2049	941-BK 941-COL	—	—	—	—	—											●			
BC-20	X5489	—	938-BK	—	—	—	—						●	●	●				●	●	
BC-21	X5852	—	937-BK	937-CY	937-MG	937-YL	937-TRIO														
BC-21e	XM????	—	937-BK	937-CY	937-MG	937-YL	937-TRIO						●	●	●				●	●	
BC-22e	X8244	—	—	—	—	—	—							●	●				●		
BC-29F	XM0025	—	—	—	—	—	—						●	●	●				●	●	
BC-60	XH2012	—	947-BK	—	—	—	—									●	●				
BC-61	XH2013	945-COL	—	—	—	—	947-TRIO									●	●				
BC-62	XH2017	946-COL	—	—	—	—	947-FOTO									●	●				
BC-62e	XH????	946-COL	—	—	—	—	947-FOTO										●				
BCI-10BK	X5718	940-BK	—	—	—	—	—											●			
BCI-11BK	X5724	941-BK	—	—	—	—	—											●			
BCI-11C	X5719	941-COL	—	—	—	—	—														
BCI-21BK	X5707	936-BK	937-BK	—	—	—	—						●	●	●				●	●	
BCI-21C	X5708	936-COL	—	937-CY	937-MG	937-YL	937-TRIO						●	●	●				●	●	
BCI-61	XH2014	945-COL	—	—	—	—	947-TRIO									●	●				
BCI-62	XH2026	946-COL	—	—	—	—	947-FOTO									●	●				
BX-3	XM0014	—	—	943-BK																	●
IS-12	XP2004	COLOUR SCANNER CARTRIDGE – IS SCAN SOFTWARE – 360 x 360 dpi – WIN 95, 98 & NT4.0																●			
IS-22	XP2008	COLOUR SCANNER CARTRIDGE – IS SCAN SOFTWARE – 360 x 360dpi – WIN 95/98, NT 4.0													●						

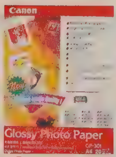
Canon
TR201
Cat XM 5010
$39⁹⁵

Canon
MK101
Cat XM 5013
$29⁹⁵

Canon
LC301A4B
Cat XM 5014
$14⁹⁵

Canon
HR101II
Cat XM 5009
$19⁹⁵


Canon
HR101
Cat XM 5011
$49⁹⁵


Canon
GP301
Cat XM 5007
$24⁹⁵

Canon
Fotoset
Cat XM 5012
$19⁹⁵

Canon
BJPSII
Cat XM 5008
$14⁹⁵

Canon
A4 Paper
Cat XM 7001
$7⁹⁵ea

MITSUBISHI CHEMICAL
A4 Inkjet
Cat F 9455
$19⁹⁵

MITSUBISHI CHEMICAL
A3 Inkjet
Cat XM 5202
$39⁹⁵

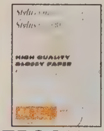
MITSUBISHI CHEMICAL
Magnet
Cat XH 6251
$24⁹⁵

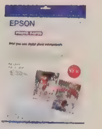
HEWLETT PACKARD
Premium Photo
Cat F 3682
$29⁹⁵

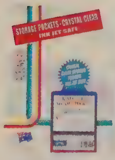
HEWLETT PACKARD
Premium Inkjet
Cat F 3683
$44⁹⁵

HEWLETT PACKARD
Premium Glossy
Cat F 3681
$29⁹⁵

HEWLETT PACKARD
A5 Greeting Cards
Cat F 9926
$18⁹⁵


EPSON
Special Coated
Cat F 3678
$57⁹⁵


EPSON
Photo Glossy
Cat F 9352
$32⁹⁵


Celcast IJ100
Cat F 9325
$29⁹⁵

Celcast IJ107
Cat F 9330
$12⁹⁵

Celcast IJ39
Cat F 9323
$19⁹⁵

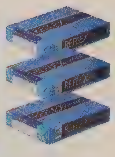
Celcast IJ64
Cat F 9324
$9⁹⁵

Celcast IJ76
Cat F 9326
$19⁹⁵

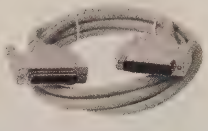
Celcast IJ77
Cat F 9327
$22⁹⁵

Celcast IJ88
Cat F 9331
$14⁹⁵

Celcast IJ90
Cat XM 7002
$19⁹⁵


Reflex A4 Paper
Cat X 2682
$7⁹⁵ea

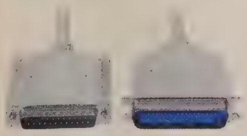
IEEE1284 Printer Cable
Cat XH 3205
$29⁹⁵


IEEE1284 Printer Extension Cable
25Male→25Female
Cat XH 3207
$34⁹⁵

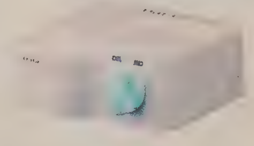
Right Angle Printer Cable
2 metres
Cat X 8615
$34⁹⁵

Printer Cable

2 m	Cat X 8614	$34⁹⁵
5 m	Cat X 8619	$34⁹⁵


HEWLETT PACKARD
Printer Cable
3 metres
Cat X 9586
$39⁹⁵

HEWLETT PACKARD
IMac Printer Cable kit
Suits deskjet 670 and 690 series. 2 metre USB cable. Drivers for MacOS 8.1+.
Cat XH 3219
$189


Printer Switch Box

2 Way	Cat XH 4500	$36⁹⁵
4 Way	Cat XH 4501	$41⁹⁵

MITSUBISHI
CD-R

MITSUBISHI CHEMICAL CDR

650Mb data, 74 min audio.
Cat X 9589 $\$4^{95}$ea

IMATION
CD-R
650MB/74MIN

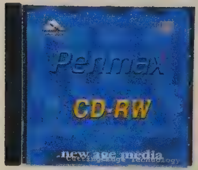
Imation CDR

650Mb data, 74 min audio.
Cat XM4108 $\$5^{45}$ea

MITSUBISHI
CD-RW

MITSUBISHI CHEMICAL CDR-W

650Mb data, 74 min audio.
Cat XH4030 $\$24^{95}$ea


Penmax
CD-RW
new age media

Penmax CDR-W

650Mb data, 74 min audio.
Cat XH4050 $\$19^{95}$ea

MITSUBISHI CHEMICAL
MF 2HD
COLOURS
IBM PRE-FORMATTED

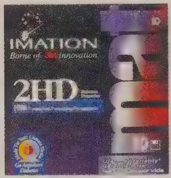
MITSUBISHI CHEMICAL 3.5" Floppy Disk

Single IBM format disk.
Cat X 7458 $\$1^{45}$ea

MITSUBISHI DISKETTES
MF2HD
ANTI MOLD
FORMATTED IBM

MITSUBISHI CHEMICAL 3.5" Floppy Disk

10 pack IBM format disks.
Cat X 7457 $\$7^{95}$pk


IMATION
Born of 3M innovation
2HD

Imation 3.5" Floppy Disk

10 pack black IBM format disks.
Cat XM4109 $\$8^{95}$pk

Imation 3.5" Floppy Disk

10 pack neon IBM format disks.
Cat XM4110 $\$9^{95}$pk

Imation Travan 3 Cartridge

Cat XM4107 $\$58^{95}$ea

TRAVAN 8GB
IMATION CARTRIDGE
TRAVAN

Imation Travan 4 Cartridge

Cat XM4105 $\$62^{95}$ea

IMATION
IMATION

Imation 4.0GB 4mm Data Cart

Cat XM4106 $\$23^{95}$ea

IMATION
IMATION

Imation 12.0GB 4mm Data Cart

Cat XM4115 $\$56^{95}$ea

FUJIFILM
zip
100MB

fuji Zip Disk

100Mb, IBM pre-formatted.
Cat XH3900 $\$24^{95}$ea

iomega Zip Disk

100Mb, IBM pre-formatted.
Cat X 6662 $\$28^{95}$ea

iomega
zip
250
PC

iomega Zip Disk

250Mb, IBM pre-formatted.
Cat XH4114 $\$49^{95}$ea

IMATION
SUPER DISK
120MB

Imation LS120 Disk

120Mb, IBM pre-formatted.
Cat XH0092 $\$29^{95}$ea

CD STOMPER pro
CD LABELING SYSTEM

CD-Stomper

Create your own professional CD labels. Easy to use, includes software and templates. Create professional labels for Zip, LS120, MO and 3.5" Floppies.

Stomper Pro + 100 Labels	Cat XH6100	$\$79^{95}$
100 Label Refill Pack	Cat XH6103	$\$54^{95}$
40 Glossy Label Pack	Cat XM5226	$\$54^{95}$
50 Jewel Case Inserts	Cat XH6104	$\$49^{95}$

maxell
LS-120
120MB

maxell LS120 Disk

120MB, IBM pre-formatted.
Cat XH8600 $\$28^{95}$ea

HEWLETT PACKARD
Expanding Possibilities

Got a PC? Then you can make Music, Video or Data CD's!

Using CDR media you can store 650MB data or record 74min music on each CD..
CDRW media is like CDR media but you can re-write music or data up to 1,000 times!

CD-Writer Plus 8200I

XH4056

$799

New!
8200i series
Highest Performance!

- EIDE-(ATAPI), MMC compliant
- 4x write, 4x rewrite, and up to 24x read
- 2 Mbyte (6 sec at 1X speed) buffer
- Media - CD-RW or CD-R
- Internal drive, installation guide (CD):

Adaptec DirectCD and Easy CD Creator; CD Labeler Kit and Software; Broderbund Multimedia Organizer Software; HP Simple Trax 2.0 and HP Disaster Recovery Software; IDE data cable; Audio cable; One blank HP CD-RW ReWritable disc and one blank HP CD-R Recordable disc

CD-Writer Plus 7570I

XH4054

$549

New!
7500i series
Easy Connection!

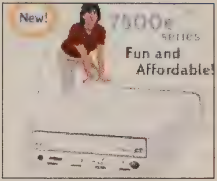
- EIDE-(ATAPI), MMC compliant
- 2x write, 2x rewrite, and up to 24x read
- 1 Mbyte (6 sec at 1X speed) buffer
- Media - CD-RW or CD-R
- Internal drive, installation guide (CD):

Adaptec DirectCD and Easy CD Creator; HP Simple Trax 2.0 Software; IDE data cable; one blank HP CD-R Recordable disc.

CD-Writer Plus 7510e

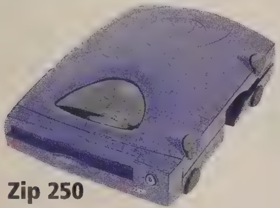
XH4055

$799



- IEEE 1284 compliant parallel port
- 2x write, 2x rewrite, and up to 6x read
- 1 Mbyte (6 sec at 1X speed) buffer
- Media - CD-RW or CD-R
- External drive,installation guide (CD):

Adaptec DirectCD and Easy CD Creator; ACID Music Creator Software; HP Simple Trax 2.0 and HP Disaster Recovery Software; External data cable; Audio cable; One blank HP CD-RW ReWritable disc and one blank HP CD-R Recordable disc.



iomega

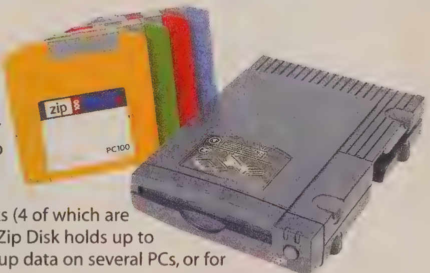
Zip 250

The new Iomega Zip 250 is the ultimate in portable storage. Each Zip 250 disks holds up to 250Mb of data – that's equivalent to 170 floppies! The Zip 250 is also capable of reading and writing any existing 100Mb Zip disks.

Cat XH7007

$499

Iomega Zip Starter Pack with 4 Disks



The Zip® Starter Kit can make your life easier. The parallel port zip drive is the perfect portable storage solution. This plug and play drive connects quickly and easily to the parallel port on your PC or Notebook, and allows you to store data on convenient 100MB Zip disks (4 of which are included in this Starter Pack). Each Zip Disk holds up to 100MB of data. Perfect for backing up data on several PCs, or for those who need to take their data with them without needing to take the whole PC!

Cat XH6994

$399

Also available: **Internal IDE Port** Cat X 9520 **$269**
Internal SCSI (No Card) Cat X 8245 **$249**
External USB Port Cat XH3928 **$369**

NEW FOR '99

Quantum
Fireball CR

Hard Disk Drives

The new Quantum Fireball™ CR hard disk drive continues the award-winning Fireball legacy of industry-leading performance with rock-solid reliability. Fireball CR drives feature a 5,400 RPM rotational speed, a 9.5 millisecond average seek time, the new Quantum-developed Ultra ATA/66 interface, and Quantum's breakthrough Shock Protection System.

4.3GB	Cat XH7014	**$269**
6.4GB	Cat XH7015	**$299**
8.4GB	Cat XH7016	**$349**
13.0GB	Cat XH7017	**$449**

External PC **Internal PC** **External Mac**

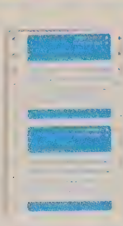
SUPER DISK

Imation LS120 Drive

Allows you to store 120Mb of data on a removable disk – that's 83 floppy diskettes – and it reads and writes normal floppy disks! No matter what kind of computer you use, an Imation SuperDisk drive is the fastest, easiest way to add high-capacity storage without sacrificing regular floppies.

External PC Parallel Port		Internal IDE Port		External Mac USB Port	
Cat XH0072	**$279**	Cat XH6984	**$239**	Cat XH6985	**$499**

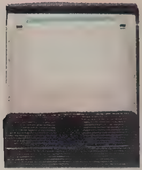
Computer Media Storage



Floppy Disk Labels
50 Labels
Cat X 1171
$6.95

Floppy Cleaning Kit
Cat X 3520
$19.95

3.5" Floppy Lock
Cat X 8644
$19.95



Floppy Disk Pocket
Holds 6 disks.
Cat X 3551
$6.95

Zip & Floppy Storage Case
Cat XH 6018
$3.95

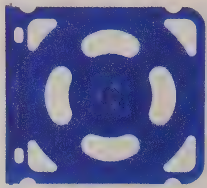
Desktop Zip & MO Holder
Cat XH 6020
$7.95

Zip Disk Case
Cat XH 6019
$6.95

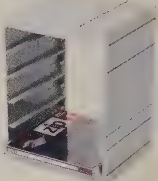
Zip Tower
Holds 20
Cat XH 6028
$12.95

Zip Jewel Case
Cat XH 6017
$1.95

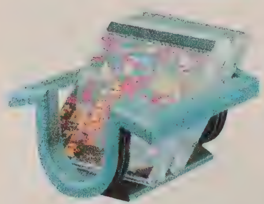
CD Jewel Case
Cat X 7549
$1.95



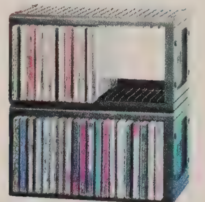
CD Quad Jewel Case
Cat X 7426
$4.95



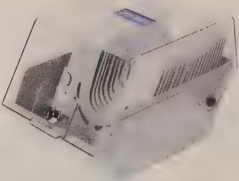
Kensington zCube
Cat XH 6005
$12.95



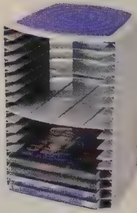
CD Pop Stand
Cat XH 6024
$12.95



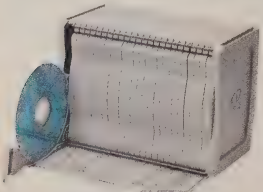
CD Rack Stack
Cat XH 6026
$14.95



CD Lockable Cabinet
Cat XH 6027
$24.95



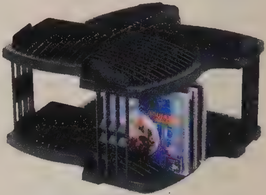
Kensington Quicktrieve
Cat XH 6006
$24.95



CD Flip File Organiser
Cat XH 6021
$49.95

CD Single Tower
Cat XH 6025
$24.95

CD Tower
Cat XH 6014
$39.95



CD Multispin 112
Cat XH 6023
$29.95

56K MODEM
Dynalink
INSERT
56K

56K PCMCIA Modem
Cat XH1010
$279

INTERNAL FAX / DATA MODEM
Dynalink
56K
FREE

56K Internal Modem
Data/fax/TAM supports Windows 95/98. NT4.0 – PCI BUS.
Cat XH1037
$199

EXTERNAL FAX / DATA MODEM
Dynalink
56K
FREE

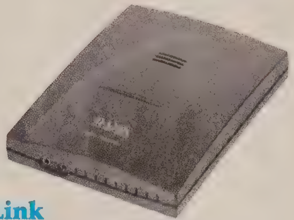
56K External Modem
Voice/fax/data supports Windows 95/98 and NT4.0
Cat XH1036
$229

56K PC CARD FAX/MODEM
TDK
CYBEREXPRESS 5600

TDK
Cyber Express
56K PCMCIA Modem
Data capable cards also available.
Cat XH1029
$349

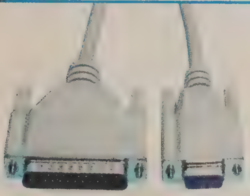
D-Link
DFM-560i

D-Link
56K Internal Modem
PCI Bus Data/Fax/Voice supports Win 95/98 and NT4.0
Cat XH1062
$179



D-Link
56K External Modem
High speed Data/Fax/Voice supports Win 3.1/95/98 and NT4.0
Cat XH1061
$219

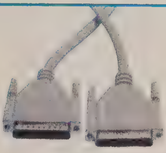
Serial Cables



2M D9F ⟶ D25M
Cat X 8007
$29.95

2M D25M ⟶ D25F
Cat X 3564
$29.95

5M D25M ⟶ D25F
Cat X 2695
$36.95

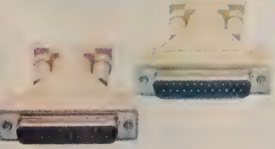


2M D25M ⟶ D25M
Cat X 3574
$32.95

5M D25M D25M
Cat X 2696
$36.95

2M D9F ⟶ D9F
Cat X 8406
$24.95

Serial Adaptors



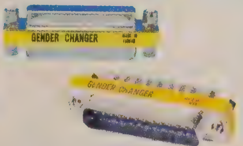
D9F ⟶ D25M
Cat X 2660
$14.95

D9M ⟶ D25F
Cat X 2661
$14.95

GENDER CHANGER

D9F ⟶ D9F
Cat X 2675
$9.95

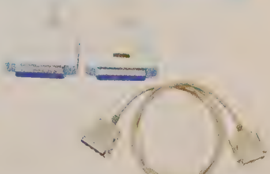
D9M ⟶ D9M
Cat X 2676
$9.95


GENDER CHANGER
GENDER CHANGER

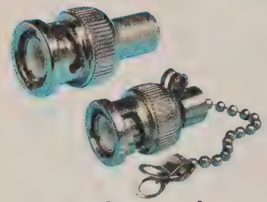
D25F ⟶ D25F
Cat X 2677
$9.95

D25M ⟶ D25M
Cat X 2678
$9.95

NULL Modems

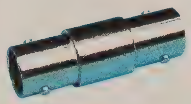


Ideal for PC gaming.
2M Cable
Cat X 2609
$24.95
Adaptor
Cat X 2664
$14.95



BNC 50 Ohm Terminator

Plain	Cat X 6914	$7.25
With Chain	Cat X 6915	$7.65



BNC I Adaptor 50 Ohms

Cat X 6916 $6.95

BNC T Adaptor 50 Ohms

Cat X 6917 $6.95

BNC Crimp Connections

Plug	Cat X 8997	$1.95
Socket	Cat X 8998	$1.95

10 Base 2 Precut Cables

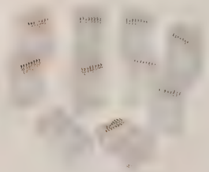
2M	Cat X 6904	$19.95
5M	Cat X 6905	$24.95
10M	Cat X 6906	$34.95

50 Ohm Coax RG58 C/U

Cat W 2092 $1.95 per metre

BNC Crimp Tool

Cat T 3537 $59.95



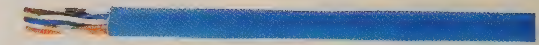
UTP Crimp Plugs

Pack of 10.

Cat X 8996 $9.95

UTP R545 Crimp Tool

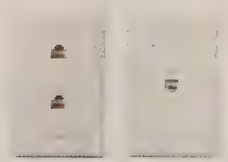
Cat T 2920 $49.95



Cat 5 UTP Patch Cable

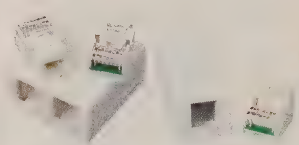
8 conductor multicore Cat 5 data cable. Ideal for making your own patch leads.

Cat W 2150 $1.25 per metre



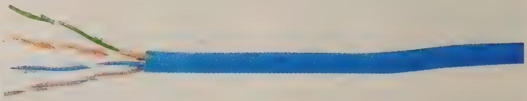
UTP Wall Plates Cat 5 Certified

Double	Cat X 8543	$19.95
Single	Cat X 8544	$14.95



UTP Surface Blocks Cat 5 Certified

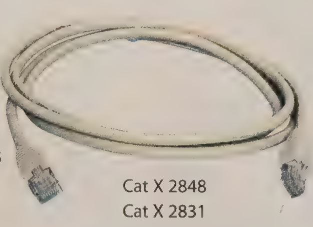
Double	Cat X 8588	$24.95
Single	Cat X 8577	$19.95



Cat 5 UTP Data Cable

8 conductor single core Cat 5 data cable. Ideal for all permanent network wiring.

Cat W 2151 $1.25 per metre



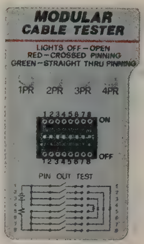
UTP Cat 5 Patch Leads

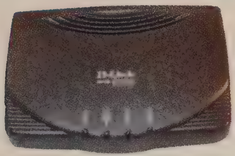
1M	Cat X 2848	$12.95
3M	Cat X 2831	$19.95
5M	Cat X 2832	$24.95
10M	Cat X 2843	$34.95

UTP Cable Tester

R545, indicates open and crossed cabling.

Cat X 8999 $59.95

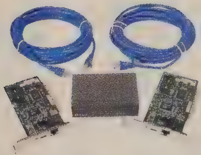

MODULAR CABLE TESTER
LIGHTS OFF – OPEN
RED – CROSSED PINNING
GREEN – STRAIGHT THRU PINNING
1PR 2PR 3PR 4PR
12345678
ON
12345678
OFF
PIN OUT TEST



D-Link DP-602 Internet Server

With the D-Link DP-602 Internet Server everyone on the network can gain access to the internet with just 1 internet account and 1 modem, or connect 2 modems and double your bandwidth! Also features "dial-on-demand".
Cat XH7256

$599



D-Link DFE-905 10/100MB Home & Office Network Kit

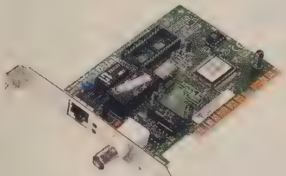
Kit comprises 1 x 4 port 10/100MB hub, 2 x 10/100MB PCI NICs, 2 x 20ft Cat 5 UTP cables, instruction manual and driver software.
Cat XH7252

$399

D-Link DE-905 10MB Home Network Kit

Kit comprises 1 x DE-805 5 port hub, 2 x ISA 10MB NICs, 2 x 20ft Cat 5 UTP cables, instruction manual and driver software.
Cat XH7204

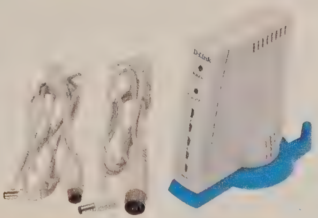
$199



D-Link DE-528CT 10MB PCI NIC

RJ45 + BNC connectors. Plug-n-play installation.
Cat XH7216

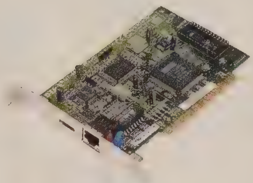
$49.95



D-Link DE-805 10MB 5 Port UTP Hub

Cat XH7206

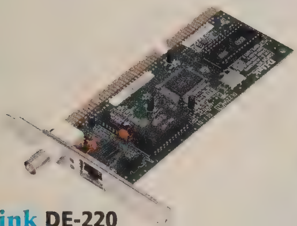
$114.95



D-Link DFE-530TX 10/100MB PCI NIC

RJ45 UTP connector. Plug-n-play installation.
Cat XH7209

$94.95



D-Link DE-220 PCI 10MB ISA NIC

R545 + BNC connectors. Plug-n-play installation.
Cat XH7208

$39.95

DFE-904
D-Link
10/100 Dual Speed Hub

D-Link DFE-904 10/100MB 4 Port UTP Hub

Cat XH7253

$299

D-Link DP-101 10MB Print Server

Supports WIN9x, NT, UNIX, TCP/IP, IPX, Net BEUI.
Cat XH7255

$599

Serial Data Transfer Cable

DB25F and DB9F at each end. Approx 5m.
Cat X 2662

$39.95

Parallel Data Transfer Cable

2M	Cat X 8259	$32.95
5M	Cat X 8261	$39.95

D-Link DMF-560TX 10/100MB PC Card NIC + 56k Modem

Cat XH7223

$549

Upgrade Cables & Adaptors

Antistatic Wrist Strap

A must for installing expansion cards or working with ICs.

Cat X 2042 **$24.95**

Disk Drive Power Splitter

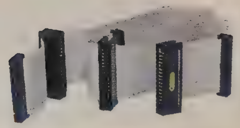
Allows you to connect 2 devices to 1 power connector.

Cat X 2604 **$15.25**

Disk Drive Power Adaptor

Allows the connection of standard 3½" disk drives to a 5¼" power supply connector.

Cat X 2605 **$6.95**



Disk Drive IDC Cable

Floppy drive data cable fitted with both edge and DIL socket connectors.

Cat X 2606 **$14.95**

IDE Mobile Rack

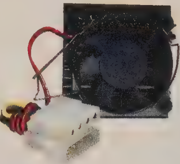
Ideal for moving your hard drive between several machines.

Cat XH 5017 **$29.95**

IDE Cable

General purpose IDE cable suitable for use with all IDE devices.

Cat X 5472 **$15.95**



CPU Cooler – Suits P7 Socket

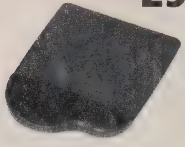
Essential cooling fan for all Pentium CPUs to avoid overheating.

Cat X 7707 **$27.95**

CD ROM Audio Cable

Suitable for use with most CD ROM drives and sound cards.

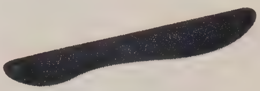
Cat XH 1810 **$7.95**



Kensington Sports Contour Gel Wrist Pad – Mouse

Comfortable ergonomic design.

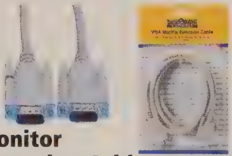
Cat XH 6011 **$49.95**



Kensington Sports Micro Gel Wrist Pad – Keyboard

Comfortable ergonomic design.

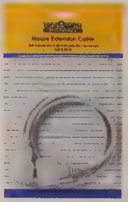
Cat XH 6012 **$54.95**



Monitor Extension Cables

2m extension cables. High density connectors on each end.

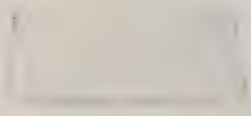
M→F	Cat X 2603	**$25.95**
M→M	Cat X 8405	**$19.95**



Mouse Extension Cables

2m extension cable.

Cat X 2610 **$19.95**



Keyboard Dust Cover

Protect your keyboard from dust and dirt.

Cat X 3141 **$14.95**

Monitor Dust Cover

Protect your monitor from dust and dirt.

14"	Cat X 3140	**$14.95**
15"	Cat X 8264	**$14.95**
17"	Cat X 8265	**$14.95**

CPU Dust Cover

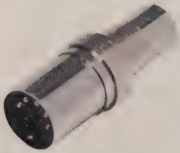
Protect your CPU from dust and dirt.

Cat X 3890 **$14.95**

Mouse Cleaning Kit

Keep your mouse in top condition.

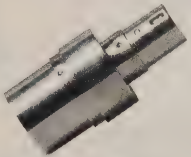
Cat X 2612 **$9.95**



Keyboard Adaptor – PS2 → AT

Slimline design.

Cat X 8222 **$9.95**



Keyboard Adaptor – AT → PS2

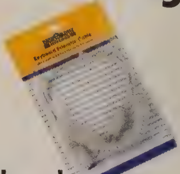
Slimline design.

Cat X 8207 **$9.95**

Keyboard Extension Cable PS2

2m coiled extension cable.

Cat X 2601 **$19.95**



Keyboard Extension Cable AT

2m coiled extension cable.

Cat X 2600 **$19.95**

Budget Mouse

The ideal entry level serial mouse.
Cat XH1831

$19.95

First Mouse (Serial)

2 button, 7 pin serial mouse. 100% Microsoft compatible.
Cat X 5182

Logitech
First Mouse

$59.95

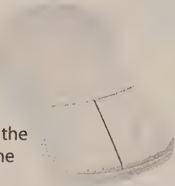
Microsoft Intellimouse

2 button mouse with scroll wheel, PS/2 and serial connectors. Ergonomic design.
Cat X 8325

$94.95

2 Button Mini Mouse

Extra small mouse for the smaller members of the family PS/2.
Cat XH1826



$26.95

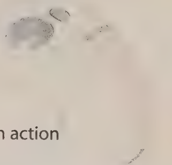
First Mouse Plus

2 button mouse with wheel, PS/2 and serial connectors included. 100% Microsoft compatible.
Cat XH1801

$82.95

Microsoft Intellimouse Trackball

Serial and PS/2. Smooth action trackball.
Cat XH0074



$119.95

2 Button Family Mouse

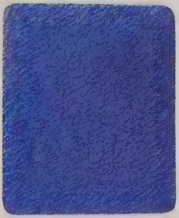
Dual size mouse for large and small hands.
Cat XH1827

$29.95

Precise Mouse Pad

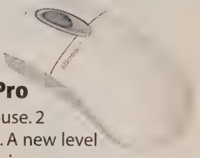
Keep your mouse running smoothly on this slimline, accurate mouse pad.
Cat XH5000

$9.95



Microsoft Intellimouse Pro

Serial and PS/2 mouse. 2 buttons with scroll. A new level of comfort and efficiency.
Cat XH1840



$149

3 Button Ergonomic Mouse

PS/2 and serial connections make this a great mouse for all users.
Cat XH1828

$38.95

3M Precise Mouse Pads

Ultra thin with an advanced micro groove surface to eliminate slipping and provide better mouse accuracy.
Cat XH5004 XH5005 XH5006

$19.95ea

3M
Precise Mousing Surface
Improves Grip and Traction of your Mouse Ball
Go precisely where you point!

Deluxe 104 Keyboard

Elegant, reliable 104-key keyboard
Deluxe 104 Keyboard

Spill resistant design and detachable palm rest.
Cat XH3407

$69.95

USB Keyboard

Available from May. (Actual keyboard may differ from one pictured).
Cat XH3413

$69.95

Web browser control at your fingertips
Internet Keyboard

Internet Keyboard

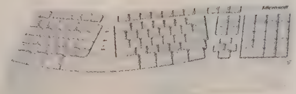
With palm rest and 17 programmable one-touch buttons.
Cat XH3405

$89.95

DSX 104 Keyboard

Extra functionality with special 'windows' hot keys. AT or PS/2.
Cat X 8243

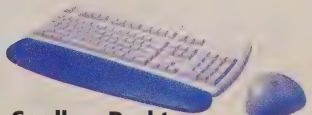
$54.95



Microsoft Elite Keyboard

Ergonomically designed with both PS/2 and USB connectors.
Cat XH3403

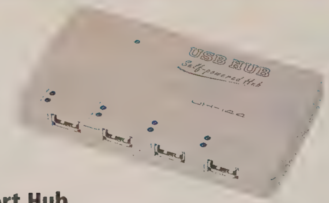
$119.95



Cordless Desktop

Get rid of those annoying cables with a cordless keyboard and mouse.
Cat XH3402

$279



USB 4 Port Hub

Connect up to 4 USB devices to this compact 4 port hub.
Cat XH7230

$189.95

NEW FOR '99

USB Serial Converter

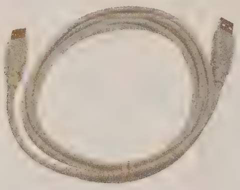
Easily connect your serial devices to a USB port.
Cat XH4214

$199

USB Parallel Converter

Easily connect your parallel devices to a USB port.
Cat XH4215

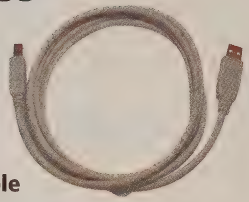
$89.95



USB Extension Cable

3 metre extension cable
A Male → A Female.
Cat XH3224

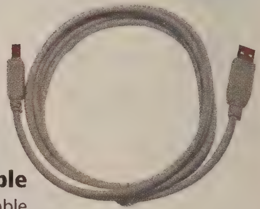
$19.95



USB Cable

1 metre cable
A Male → B Male.
Cat XH3225

$17.95



USB Cable

3 metre cable
A Male → B Male.
Cat XH3226

$19.95

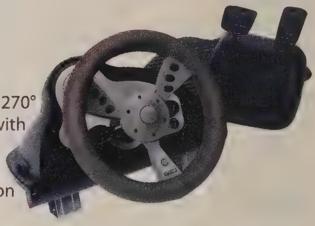
Dexxa Steering Wheel

Give all your racing games a realistic edge with the Dexxa Steering Wheel. Complete with gear stick and foot pedals.
Cat XH3621

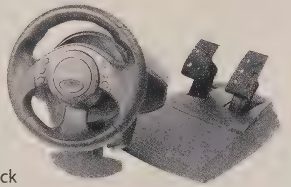
$139

Act Labs RS

Padded racing wheel with 270° turning radius. Complete with Formula One style gear shifters and non slip foot pedals. (Optional Playstation adaptor also available.)
Cat XH3617



$199



Microsoft
Sidewinder Force Feedback Steering Wheel

The Sidewinder Force Feedback Wheel offers the realistic look, performance and ruggedness that racing fanatics demand. Includes foot pedals.
Cat XH3627

$399

LOGITECH Wingman Formula Force

For an ultra realistic road experience, grab hold of the Formula Force, the supreme PC racing wheel with I-Force technology.
Cat XH3620

$399

Microsoft
Freestyle Pro Joystick Bundle

With motion sensing technology the Freestyle Pro is ideal for driving, flying and combat games. Includes Microsoft's Motorcross Madness.
Cat XH3622

$189

Joystick 'Y' Adaptor

Connect 2 joysticks to 1 game port.
Cat X 2041

$19.95

Joystick Extension Cable

15M→15F 2 metres.
Cat XH3201

$19.95

Microsoft

Sidewinder Precision Pro

Digital optical technology and improved ergonomics with 8 way hat switch, throttle wheel and handle 'rudder' movement. Fully programmable.
Cat XH0075

$129

LOGITECH

Wingman Interceptor

With 9 buttons and 3 hat switches, the Interceptor is the smooth, powerful and precise controller. Radial throttle for comfort and control.
Cat XH3623

$149

Microsoft

Sidewinder Force Feedback

The Force Feedback Pros' 16 bit on stick processor delivers realistic, hi fidelity forces faster. Feel true to life feedback from subtle nuances to raw power forces. Fully programmable with hat switch and throttle.
Cat XH3600

$299

LOGITECH

Wingman Force

'Push the stick that pushes back'. 9 programmable buttons, 8-way hat switch, high precision throttle and I-force technology makes the Wingman Force a joystick to be reckoned with.
Cat XH3618

$299

Saitek X-36 Joystick and Throttle

The ultimate flight stick! Fully programmable joystick with separate throttle stick. The X-36 takes flight simulation into the year 2000 and beyond.
Cat XH3613

$299

GC-1000A Joystick

Giving you performance at an affordable price. 4-way hat switch and throttle control. Solid base with suction cups for slip free use.
Cat X 3497

$\$49^{95}$

Saitek Cyborg 2000

4 button analog stick with hat switch, superb lever action throttle. Fully adjustable to suit both left and right handed gamers.
Cat XH3624

$129

Super Cobra PC Gamepad

Ergonomically designed PC Gamepad allows you to tackle any opponent with ease.
Cat XH3631

$\$29^{95}$

Saitek X7-38

4 button joystick with throttle control. Ergonomic design. X and Y trim controls.
Cat XH3611

$\$59^{95}$

Champ
OFF A AUTO
OFF B AUTO
C+D
A+B
A-turbo-B
D
A
B
C

PC Powerpad

Two joypads in one! With removeable stick and 6 buttons.
Cat X 1092

$\$29^{95}$

Software – Productivity

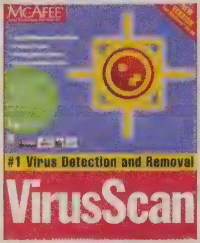
Dick Smith Electronics carries quality business and productivity software from renowned publishers like Microsoft, Adobe and Corel. Whether you require an anti-virus product, publisher or even a small business accounting package, then we can cater to your needs.

NEW FOR '99

McAfee Virus Scan Classic V4.0

Latest edition in the popular and effective virus prevention and checking software from McAfee.
Cat XS4964

$99.95

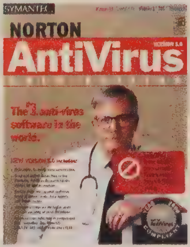

McAFEE
NEW VERSION
#1 Virus Detection and Removal
VirusScan

Norton Anti-Virus Gold V5.0

NEW FOR '99

NAV keeps your computer safe from viruses that may come in via email, internet, floppy disks, CDs or a network. It works constantly in the background and can be scheduled to automatically retrieve new anti-virus definitions from Symantec.
Cat XS4781

$149.95

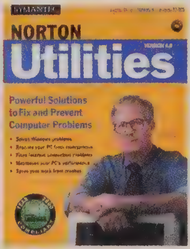

SYMANTEC
NORTON
AntiVirus
The #1 anti-virus software in the world.

NEW FOR '99

Norton Utilities 4.0

The most complete problem-solving software you can buy. Norton Utilities protects you and protects your investment. The System Genie makes Windows work the way you want.
Cat XS4849

$199.95

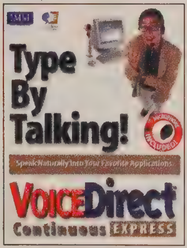

SYMANTEC
NORTON
Utilities
Powerful Solutions to Fix and Prevent Computer Problems

Voice Direct Continuous Express

NEW FOR '99

Using IBM ViaVoice technology, VoiceDirect is a professional speech recognition system that lets you speak into virtually any Windows applications – just by speaking in your normal voice, up to 100 words per minute! Includes microphone.
Cat XS4995

$99.95

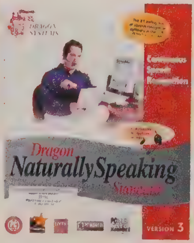

IMSI
Type By Talking!
Microphone included
Speak Naturally into Your Favorite Applications
VoiceDirect
Continuous EXPRESS

NEW FOR '99

Dragon Naturally Speaking Standard

Includes all the essential speech recognition features plus integration with the two most popular word processors and dictation into your favourite Windows applications.
Cat XS4858

$329

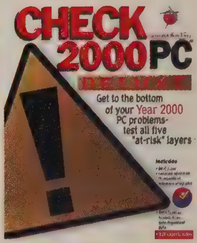

Dragon Systems
Continuous Speech Recognition
Dragon NaturallySpeaking
Standard
Version 3

NEW FOR '99

Check 2000 PC Deluxe

The ultimate tool for beating the Milennium Bug. If you're not checking all five "at-risk" layers of your PC, it could fail to function... even before the year 2000!
Cat XS4992

$149.95


CHECK 2000PC
DELUXE
Get to the bottom of your Year 2000 PC problems - test all five "at-risk" layers

IMSI Masterclips 150,000

A uniques collection of premium images with exclusive art from around the world. MasterClips images are hand-selected to meet any home or business publishing need.
Cat X 8911

$99.95

IMSI
MasterClips
150,000
Premium Images
In Hundreds of Popular Categories
Clip Art
MasterPhotos
Web Art
Fonts
Sounds
Animation & Video Clips
OVER ONE MILLION SOLD

NZ Home & Office Accounting

An award winning small business accounting system, designed in New Zealand for New Zealand businesses. Fully GST and Year 2000 compatible, with nationwide support options.
Cat XS4539

$199.95

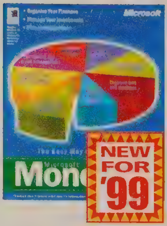
PC WORLD editor's choice
Simple and Practical
Two Systems in One (Home and Office)
Invoicing/Statements
Inventory/Sales
Debtors
Cashbook
Automatic GST
ENZSYS 3
NEW ZEALAND HOME & OFFICE
YEAR 2000 COMPLIANT

Quicken
DELUXE
Quicken
The easiest way to organise your money ever!
Get rich, slowly.
Quicken
For BUSINESS
Organises your money while you look after your business
Get rich, slowly.
QuickBooks
The fastest, easiest way to manage your business.
No.1
dataflow

NEW FOR '99

Quicken V7.0	Cat XS4843	$99.95
Quicken Deluxe V7.0	Cat XS4869	$139.95
Quicken For Business	Cat XS4874	$199.95
Quickbooks V5.0	Cat X 8546	$449.95

Microsoft Money 99



Easily perform your core financial tasks. Everything from paying your bills to creating a budget, to reducing debt in a faster and smarter way.
Cat XS 4912

$69 95

Microsoft Studio Greetings 99

Now you can create Hallmark-quality greetings at home. Anyone can make a very special greeting for any occasion. It's fast, it's fun and it could only come from you!
Cat XS 4907

$79 95

IMSI Floorplan 3D Design Suite

Whether you're building a home or garden or just looking to redo your kitchen or bathroom, FloorPlan lets you create your design with ease. Two and three dimensional options.
Cat XS 4883

$119 95

Microsoft Picture It 99

More content, more touch-up features, plus new ways to send photos via email or post them to the Web. More of everything you expect in your photo-editing software, with a few new surprises!
Cat XS 4946

$99 95

Microsoft Encarta Reference Suite 99

Combining 3 of the world's most popular reference products to create the essential multimedia reference library for home or school. Includes Encarta Encyclopedia Deluxe 99, Encarta Virtual Globe 99, Microsoft Bookshelf 99.
Cat XS 3277

$199 95

Corel Draw Select V7

CorelDRAW 7 is created for the professional illustrator, graphic artist and desktop publisher. CorelPHOTO-PAINT 7 easily creates stunning designs and special effects. A powerful, customizable paint and photo editing tool.
Cat XS 4780

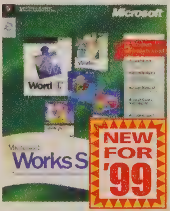
$199 95

Microsoft Windows 98 Upgrade CD

The new operating system makes your PC work better by improving system performance and maintenance, and making Internet access easier. Plays better with the latest graphics, sound, multimedia and peripherals support.
Cat XS 4810

$199 95

Microsoft Works Suite 99



The tools to help you complete common home tasks quickly and easily. Includes complete versions of leading Microsoft applications all in one box.
Cat XS 4908

$199 95

Family Tree Maker

America's number one selling family tree program. It is easy to use, yet so comprehensive you won't outgrow it. Just enter a few family names and facts, and then instantly produce a wide variety of beautiful trees, reports and books
Cat XS 3060

$69 95

Microsoft Office 2000 Standard Upgrade

Includes new 2000 versions of PowerPoint, Outlook, Excel and Word.
Cat XS6004

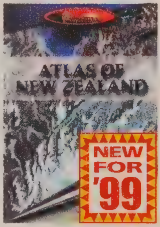
$599

Microsoft Office 2000 Small Business Upgrade

Includes new 2000 versions of Publisher, Outlook, Excel and Word. It also includes the Microsoft Small Business Tools which has business and customer management.
Cat XS6005

$599

Atlas of NZ



An amazing user friendly interface combined with superb cartography, stunning satellite images and comprehensive text ensure every visit you make to this atlas will be a rewarding and informative experience.
Cat XS 3136

$49 95

Microsoft Office 2000 Professional Upgrade

Includes new 2000 versions of Access, PowerPoint, Publisher, Outlook, Excel and Word. It also includes the Microsoft Small Business Tools which has a business and customer management.
Cat XS6001

$799

Microsoft Office 2000 Premium Upgrade

Includes new 2000 versions of FrontPage, PhotoDraw, Access, PowerPoint, Publisher, Outlook, Excel and Word. It also includes the Microsoft Small Business Tools which has a business and customer management.
Cat XS6006

$999

Encyclopedia Britannica 99 CD

Contains the entire text of the 32 volume print set, the last four Britannica Yearbooks 4000+ images and 1200 interactive maps – all on one CD, so there's no disc swapping! For Windows 3.1x, 95, 98, Mac.
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$249

Dick Smith Electronics carries a wide range of quality educational computer software for ages from 3 years old. Whether your child needs help with reading or you just want them to play games that help them learn, then we have a software title to suit.

Reader Rabbit's Toddler
Reader Rabbit's Preschool
Reader Rabbit's Kindergarten
The Learning Company

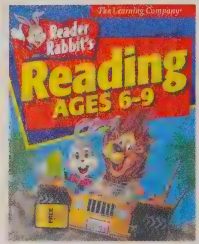
Reader Rabbits

Toddler	Cat X 7355
Preschool	Cat X 7556
Kindergarten	Cat X 7538

$39.95ea

Reader Rabbit's Reading 6-9

NEW FOR '99

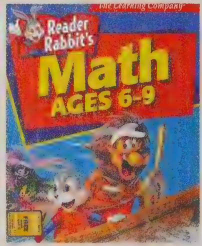

The Learning Company
Reader Rabbit's
Reading
AGES 6-9

Help Reader Rabbit and Sam the Lion on their quest to find imagination. Travel to strange and exciting Reading Lands, where anything can happen. A whole new kingdom of fun and adventure starts with reading!
Cat XS 3403

$69.95

Reader Rabbit's Math 6-9

NEW FOR '99

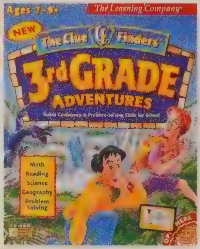

The Learning Company
Reader Rabbit's
Math
AGES 6-9

Sam the Lion and Reader Rabbit are shipwrecked on a mysterious, hilarious island. Help your friends repair their ship by winning games, solving puzzles, and outsmarting a band of mischievous pirates!
Cat XS 3402

$69.95

The Clue Finders 3rd Grade Adventures for ages 7-9

NEW FOR '99


Ages 7-9+
The Learning Company
NEW
The Clue Finders
3rd GRADE ADVENTURES
Math
Reading
Science
Geography
Problem Solving

A daring group of kid detectives, a jungle adventure, and the mystery of an ancient monster make this the most exciting way to develop essential academic and thinking skills.
Cat XS 3233

$69.95

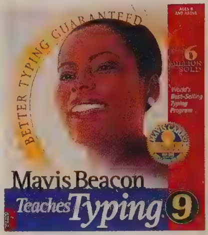
Super Solvers Super Learning Collection

Ages 7-12
The Learning Company
Super Solvers
Super Learning Collection!
for CD-ROM
Midnight Rescue!
OutNumbered!
Spellbound!
READING
SPELLING

Three complete award winning programs that develop reading, maths and spelling skills. This special Limited Edition contains Midnight Rescue, Outnumbered and Spellbound.
Cat X 5247

$99.95

Mavis Beacon Typing V9.0


BETTER TYPING GUARANTEED
6 MILLION SOLD
Mavis Beacon Teaches Typing 9

Whether you need typing skills to run a small business, chat on the Internet, or make school projects look more professional, Mavis guarantees satisfaction. Lessons start at your level, and your progress is monitored.
Cat XS 3272

$59.95

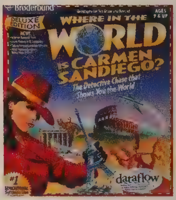
Bears

BEARS
dataflow

This is an Award winning program written in New Zealand. It is suitable for ages 3 to 8 and is Windows and Macintosh compatible.
Cat XS 3134

$69.95

Where in the World is Carmen Sandiego Deluxe


Brøderbund
DELUXE EDITION
WHERE IN THE WORLD IS CARMEN SANDIEGO?
dataflow

Expand kids' knowledge of world geography and cultures as they travel to 50 countries, gather clues from hundreds of animated characters, and take guided tours through scrolling landscapes filled with music.
Cat XS 3347

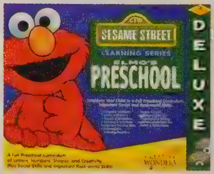
$79.95

Treasure Seekers

The Learning Company
TREASURE SEEKERS
3 Action-Packed Adventures
Multi-Subject
Reading
Math
Science
Thinking

Three action packed adventures for ages 5 to 9. Develops Reading, maths, science, and thinking skills. Windows and Macintosh compatible.
Cat XS 3177

$99.95ea


SESAME STREET
LEARNING SERIES
ELMO'S PRESCHOOL
DELUXE

NEW FOR '99

SESAME STREET
LEARNING SERIES
GET SET FOR KINDERGARTEN
DELUXE

Sesame Street

Elmo's Preschool	Cat XS 3263
Get Set Kindergarten	Cat XS 3264

$49.95ea

Dick Smith Electronics stocks only the most acclaimed computer games. We stock a wide range including strategy, role playing, action, sports and motor racing. Check out our instore "Top Ten", which is updated weekly showing you our most popular games.

PLATINUM PC
CARMAGEDDON
$29.95
ANNIHILATION
HOT PRICE
DUKE NUKEM 3D
HEROES II of Might and Magic

NEW FOR '99

"Platinum PC" Software Games

Carmageddon	Cat XS0441
Total Annihilation	Cat XS0009
Heroes of Might & Majic II	Cat X 4348
Oddworld Abe's Odyssey	Cat XS3028
Duke Nukum 3D	Cat X 6342

From $19^95

WORLD CUP 98
RED ALERT
SIM CITY 2000
COMMAND & CONQUER
CRICKET ASHES TOUR

NEW FOR '99

EA "Classic Collection"

Command and Conquer	Cat X 6256	$29^95
Sim City 2000	Cat X 5803	$29^95
World Cup Soccer 98	Cat X 6366	$29^95
Red Alert	Cat X 4525	$29^95
Cricket Ashes Tour	Cat XS0368	$39^95

From $29^95

Top selling PC Games at Hot Prices

EA Sport Cricket World Cricket

NEW FOR '99

Stunning 3D graphics and motion captured players, along with unique camera perspectives, on-field and crowd sounds that just aren't possible on TV. This unparrelled attention to detail continues through to the most accurate and up to the minute player ratings and statistics available, as well as accurately modelled stadia physics, pitch and weather conditions.
Cat XS0457

$79^95

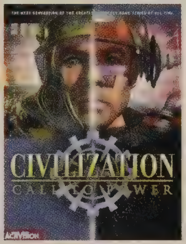
EA SPORTS
CRICKET WORLD CUP 99

Civilization "Call to Power"

NEW FOR '99

Build an empire to span history from primitive beginnings into the sci-fi future of 3000AD. Lead your turn-based conquest on land, to the recesses of the ocean and into the vastness of outer space.
Cat XS0434

$99^95


CIVILIZATION
CALL TO POWER
ACTIVISION

Need for Speed III "Hot Pursuit"

NEW FOR '99

Holden v Ford v The World. So real you can almost smell the leather. Race on both sides of the law with "Hot Pursuit" mode. Feel the thrill of competition and the thrill of the chase.
Cat XS0230

$69^95

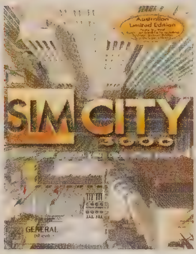
NEED FOR SPEED III
HOT PURSUIT

NEW FOR '99

Sim City 3000

Recreate your own version of the world's greatest cities, adding famous landmarks or your own buildings. All new missions and cool disasters which test your ability to run your city or even destroy it.
Cat XS0301

$99^95

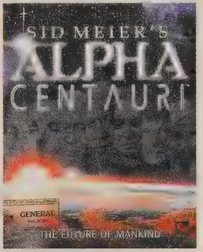

Australian Limited Edition
SIM CITY 3000
GENERAL

Sid Meier's Alpha Centauri

NEW FOR '99

The next evolution in strategy games, with the most addictive, compelling gameplay yet. Explore the alien planet that is your new home and uncover its myriad mysteries. Build your empire and conquer your enemies.
Cat XS0394

$99^95

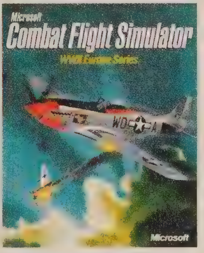

SID MEIER'S
ALPHA CENTAURI
GENERAL
THE FUTURE OF MANKIND

Microsoft® Combat Flight Simulator

NEW FOR '99

WWII Europe Series. Combining all the realism of Microsoft Flight Simulator with the air combat excitement of WWII< Combat Flight Sim provides the most realistic flight performance of any WWII air combat game!
Cat XS0244

$99^95

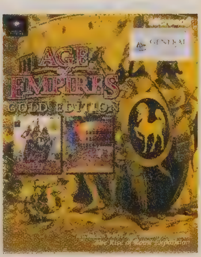

Microsoft
Combat Flight Simulator
WWII Europe Series
Microsoft

Microsoft® Age of Empires Gold Pack

NEW FOR '99

Age of Empires is an epic real-time strategy game spanning ten thousand years. But don't stop there! The Rise of Rome continues your gameplay with additional civilisations and campaigns, showcasing the Roman Empire.
Cat XS0400

$99^95


AGE OF EMPIRES
GOLD EDITION
GENERAL

Basic & Desktop Calculators

SHARP

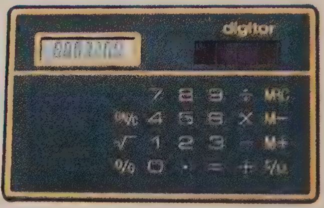
EL233L Basic Calculator

An excellent basic calculator with 8 digit display. Great for keeping shopping within your budget. Has Memory, Percentage and Square Root keys.
Cat V 3848

$\$7^{95}$

digitor

Credit Card Sized Solar Calculator



A super handy 'credit card sized' calculator that fits easily into your wallet or purse. Take it shopping and balance your budget. Has memory, percentage and square root keys.
Cat V 3055

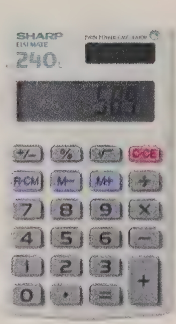
$\$9^{95}$

SHARP

EL240L Basic Calculator

Easy-to-read 8 digit display with solar power and battery backup. It has all the normal functions – Memory, Percentage and Square Root keys as well as a +/- button for working with negatives.
Cat V 3819

$\$12^{95}$



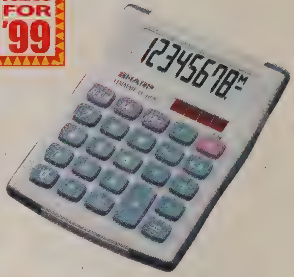
NEW FOR '99

SHARP

EL310A Calculator

Anti shock series for secure usage. Easy to use more compact size. Easy to read large display. Twin power. 8 digit with memory.
Cat V 3864

$\$19^{95}$



SHARP

EL320L Folding Calculator

This calculator has extra large keys for easy use, as well as a large display. This calculator is solar powered with battery backup. Memory, Percentage and Square Root keys, as well as a +/- button for working with negatives.
Cat V 9003

$\$22^{95}$

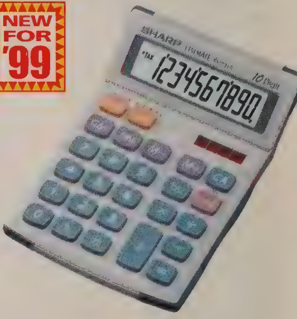
NEW FOR '99

SHARP

EL331AB Calculator

Anti shock series for secure usage. Tilt display. Easy to read large display. Twin power. 10 digit with punctuation. Tax +/_ function
Cat V 3856

$\$29^{95}$

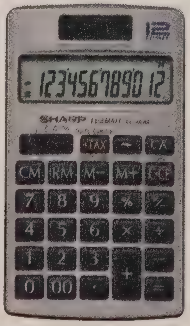


SHARP

EL342M Desktop Calculator

This new calculator has a 12 digit display with punctuation. It is a dual powered calculator with solar power and backup battery. It has a tax key and comes with its own protective wallet. Memory, Percentage and Square Root keys.
Cat V 9333

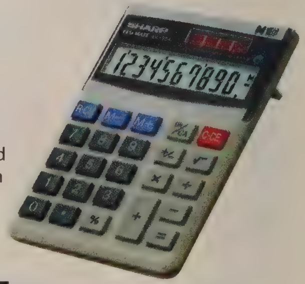
$\$29^{95}$



SHARP

EL354M Desktop Calculator

This calculator has an adjustable 10 digit display. Dual powered (solar and battery backup). Complete with Memory, Percentage and Square Roots keys. +/- button for working with negatives.
Cat V 3715



$\$39^{95}$

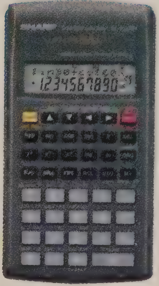
Scientific Calculators

SHARP

EL531RH Non Programmable Calculator

Direct Advanced Algebraic Logic (D.A.L.). 2 line display – see equation and answer at same time. Easy glide hard case for protection. Memory, Percentage and Square Root keys. +/- keys for working with negatives. 183 functions.
Cat V 3861

$\$29^{95}$

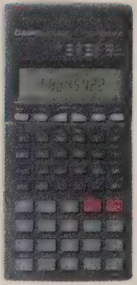


CASIO

FX82 Scientific Calculator

2 line display (equation and result simultaneously). Visually Perfect Algebraic Method (V.P.A.M.). Moving cursor – make corrections easily. 7 memories, 159 functions, handy protective case. Memory, Percentage and Square Root keys. +/- keys for working with negatives.
Cat V 4790

$\$34^{95}$



SHARP

EL5120 Programmable Calculator

Direct Algebraic Logic (D.A.L.). One-line editor, playback function. 3 digit display with high contrast LCD. Memory, Percentage and Square Root keys. +/- button for working with negatives. Protective case and a quick reference guide.
Cat V 3827

$\$89^{95}$

SHARP

EL9600
Graphic Calculator

Equation editor, world's first pen touch graphic screen. Split screen, shift and change, slid show, rapid graph/window/200m, 700+ functions.
Cat V 3770

$\$179^{95}$

Business Calculators

HEWLETT PACKARD

Business Calculator

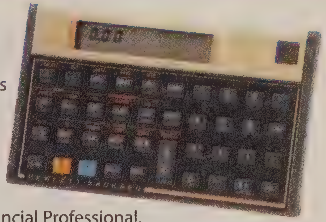
The HP10B has more than 100 business uses. Interest rate conversions, linear regression and forecasting, mark up as a percent of cost and price. This calculator has a strong construction and a 12 month warranty.
Cat V 3530

$\$89^{95}$

HEWLETT PACKARD

12C

Over 120 built-in business functions. Allow 20 different cashflows. Reverse Polish Notation. The perfect calculator if you are in Real Estate, Banking or you are a Financial Professional.
Cat V 9324



Not available in all stores. Please ring first.

$199

Printer Calculators

SHARP

EL1611L Hand Held Printer Calculator

A compact handheld printer calculator with internal/external paper roll. It features a 12 digit display with punctuation. It is capable of printing at 1.4 lines per second. Its large clear screen and large buttons make it easy to input numbers quickly.
Cat V 3891

$\$79^{95}$ea

Also Available:

57mm x 57mm Rolls	Cat V 3017	**$1.95**
AC Adaptor	Cat V 9326	**$29.95**

Franklin

Spellmaster SPQ106

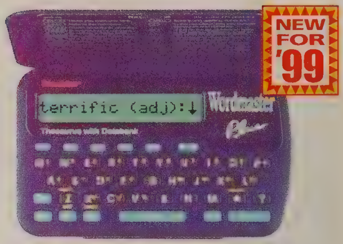
NEW FOR '99
Spellmaster Plus

Spell corrects over 70,000 words, defines commonly confused words, 6 word games, crossword solver, matchmaker feature. Full function calculator, metric conversion, electronic databank, password protected, flip top case. Batteries included.
Cat V 7338

$59.95

Franklin

Pocket Wordmaster TPQ106



Spell corrects over 80,000 words in Queen's English. Contains definitions for 30,000 words and 500,000 synonyms & antonyms. Defines commonly confused words, plays 10 word games, crossword solver, calculator with metric conversion, help function and flip top case.
Cat V 7339

$89.95

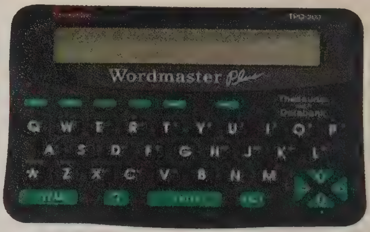
ENTER a word
SPELLBOUND
CLEAR
ENTER

Franklin

Spellbound SCQ200

Phonetic spelling correction for over 70,000 words. Comes with a databank, 6 word games including hangman, crossword solver and much more.
Cat V 7346

$99.95



Franklin

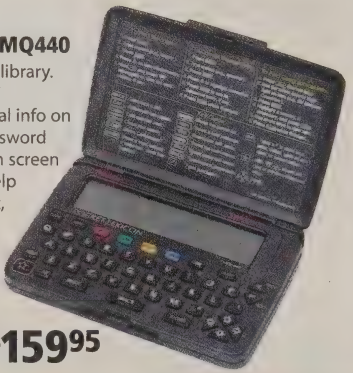
Wordmaster plus TPQ200

500,000 synonyms and antonyms with spell correction for over 80,000 words. Databank for up to 50 entries with password protection. 10 word games, crossword solver and matchmaker feature.
Cat V 7345

$129.95

BOOKMAN

Pocket Lexicon TMQ440

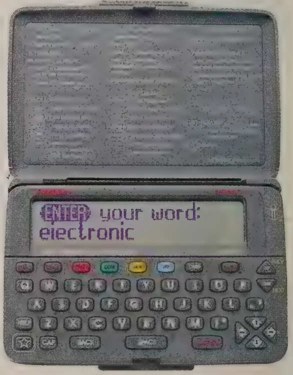


Expandable electronic library. 500,000 synonyms and antonyms. Geographical info on over 45 countries. Crossword Solver. Word games. On screen tutorial – menu and help functions. Variable font, four line screen, auto shut off to save on power. Bookman cartridge slot. 12 month warranty.
Cat V 7329

$159.95

BOOKMAN

Series Dictionary DMQ440



Expandable electronic library. Contains full dictionary. 500,000 synonyms and antonyms. Crossword solver. Word games. On screen tutorial, menu and help functions. Variable font. Auto shut off to save power. Bookman cartridge slot. 12 month warranty.
Cat V 7326

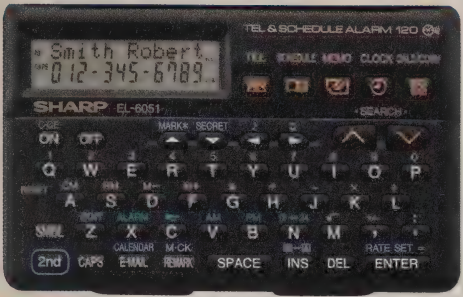
$199.95

Bookman Accessories

There are several cartridges available for the Bookman product (V7326 / V7329). Please ask instore for details. Cartridges are available in the following categories:

- Dictionary/Thesaurus Cards
- Bible Reference and Teaching Cards
- Encyclopaedias
- Language/Translation Cards
- Medical Reference Cards
- General Interest/Entertainment Cards

Digital Diaries & Organisers

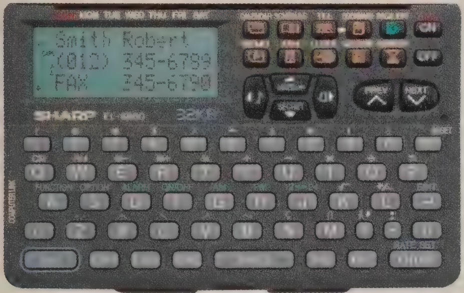


SHARP

EL6051 Memo Master

2Kb of memory, 12 x 2 line display, world/home clock, 2x telephone directory files, e-mail address, schedule with alarm. (Protective lid not shown).
Cat V 9325

$\$22^{95}$



SHARP

32Kb Organiser EL6660

32KB memory, 14 x 3 line backlit display 3x telephone directory files, bookmark, e-mail address. (Protective lid not shown).
Cat V 9327
Also available: **PC Link** Cat V9332 **$129**

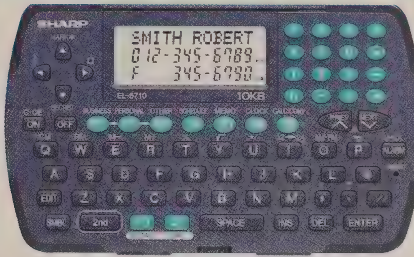
$\$59^{95}$

SHARP

128Kb Organiser ZQ170

A powerful organiser with To Do function, index and search function, and expense manager, all in addition to the regular features. (Protective lid not shown).
Cat V 9329
Also available: **PC Link** Cat V9332 **$129**

$\$129^{95}$

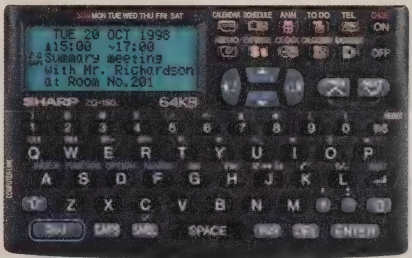


SHARP

Organiser EL6710

Business and personal directories, schedule, memo, clock, calculator, currency conversion, numeric keypad, URL and email directory and passcode. (Protective lid not shown).
Cat V 3435
Also available:
128Kb ZQ170 Cat V9329 **$99** **PC Link** Cat V9332 **$129**

$\$29^{95}$



SHARP

64Kb Organiser ZQ150

64Kb memory, backlit display, 1 month calendar, 3x telephone directory files, To Do function, powerful search function. (Protective lid not shown).
Cat V 9328
Also available:
PC Link Cat V9332 **$129**

$\$89^{95}$

SHARP

ZQ470 128Kb Organiser

128Kb memory, 19 x 5 line backlit display, separate numeric keypad, To Do and Expense Function, World/Home Clock. (Protective lid not shown).
Cat V 9331
Also available:
PC Link (CE490) for ZQ470 Cat V9332 **$129**

$\$199^{95}$

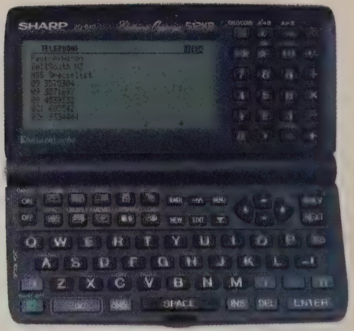
SHARP

ZQ570 256Kb Organiser

Large backlit display (20-column x 10-line) with easy to read font, and large button layout. Separate calculator. 256Kb high capacity memory with powerful contact database and schedule manager. Also includes a home and world clock and many more functions.
Cat V 9330

Also available:
PC Link – Docking Station (CE-60K) Cat V 4694 **$159**

$249.95



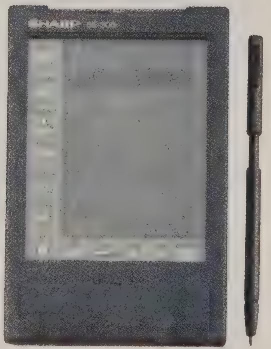
SHARP

ZQ640 512Kb Organiser

Extra large backlit display (40-column x 10-line) with easy to read font, and large button layout. Separate calculator keypad. 512Kb high capacity memory with powerful contact database and schedule manager. Also includes a home and world clock and many more functions.
Cat V 4693

Also available:
PC Link – Docking Station (CE-60K) Cat V 4694 **$159**

$299



SHARP

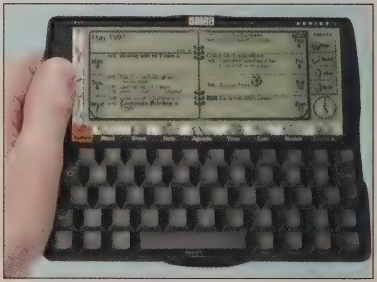
SE-300 PDA

Large penbased touch screen with digit word recognition, 1Mb memory with an infrared link for wireless data transfer, data synchronisation and much, much more. Comes with PC Link Docking Station and software.
Cat V 3750

$369

PSION

Psion 5 Series 8Mb Backlit



8Mb memory, laptop-style touch-type keyboard. Pen for easy on-screen selection. Digital recording and playback of voice memos etc. Expansion slot for plug in software or extra memory. Infrared window for wireless communication. Wordprocessor and spreadsheeting functions. Spell-checking and Calculator, Database and Sketch, Alarm Clock and World Information. E-mail, web browsing and faxing options (may require extra links or software).
Cat V 9112

$1199

Accessories

Exchange Data between your Organiser & PC

Link device for	Cat No	Price
Casio Organiser FA 126-127	Cat V 4654	**$139**
Digitor 64Kb and 66Kb Organiser	Cat V 3410	**$64.95**
Sharp ZQ6000 series – software only	Cat V 4623	**$79.95**
Sharp ZQ6000 series – cable only	Cat V 4591	**$119**
Sharp ZQ570/640 Docking Station	Cat V 4694	**$159**
Sharp ZQ6000 series – cable only	Cat V 4591	**$119**
Sharp EL6660/90 – ZQ150/170/470	Cat V 9332	**$129**

Exchange Data between two Organisers

Casio to Casio	Cat V 4549	**$29.95**
Sharp ZQ series to Sharp ZQ series (except ZQ1300A and ZQ1400A)	Cat V 4595	**$69.95**

Data accessories not available in all stores. Please ring first.

Terapin Leather Cases

Terapin Executive Case	Cat V 9010	**$89.95**
Terapin Professional Case	Cat V 9011	**$99.95**
Terapin Organiser Case	Cat V 9012	**$49.95**

High End Portable Digital Assistants

PalmPilot Professional Pocket PC

1Mb memory with backlit screen. Date Book and Address Book. Mail Application (software additional). To Do List and Memo Pad, Expense applications, Calculator, Security, Games. Hotsync – transfer data to your PC with the touch of a button. Upgradeable and expandable.
Cat V 4761

$499

3Com More connected.™

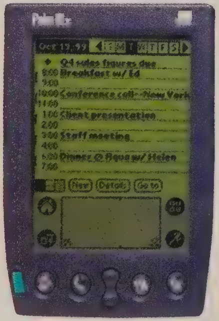
Palm III for Windows

Able to store 6000 addresses, 5 years of appointments, 1500 memos and 200 e-mails. Send and receive e-mails using the optional co-pilot modem (V 4768 $349) and your existing internet account. Great feature for travelling.
Cat V 9335

$799

NEW FOR '99

3Com More connected.™



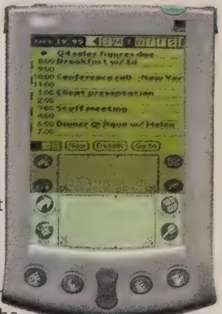
Palm IIIx Organiser

The Palm IIIx Organiser has all the same organising applications as the Palm III device, with an advanced LCD screen for razor sharp clarity and double the storage. Stores approximately 12,000 addresses, 5 years of appointments, 3,000 to do items, 3,000 memos. 400 e-mail messages plus more applications and games.
Cat V 4799

$899

NEW FOR '99

3Com More connected.™

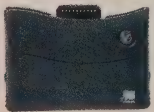


Palm V Organiser

This organiser is something special. With its ultra small, ultra thin, anodised aluminium case, the elegant design of the Palm V is bolder and sleeker. It includes a rechargeable lithium-ion battery that charges when placed in its cradle. It can go for weeks on a single charge. It also has the new advanced razor sharp LCD screen. It has the same applications and memory capacity as the Palm III Organiser.
Cat V 4795

$1099

Popular Palm Accessories



Slim Leather Case	Cat V 4754	$69.95
Deluxe Leather Case	Cat V 4758	$119.95
Co Pilot Modem	Cat V 4768	$349

Palm Pilot 2MB Upgrade	Cat V 4781	$349
Palm III Stylus 3 Pack	Cat V 4774	$34.95
Palm III Spare Cradle	Cat V 4776	$79.95
Pilot Mac Pack	Cat V 4755	$49.95
Docking Cradle	Cat V 4756	$69.95
Hotsync Cable	Cat V 4757	$54.95
Intellisync Software	Cat V 4765	$149.95
Modem Cable	Cat V 4764	$49.95
Handstamp Pro-Software (requires modem)	Cat V 4767	$149
Handstamp version 2.0 (requires modem)	Cat V 4766	$119

Accessories not available in all stores please ring first.

NEW FOR '99

digitor

AM/FM Pocket Radio

Features pocket sized slim design, AM/FM radio, comes with earphones. Requires AAA batteries (not supplied).
Cat A 4069

$14⁹⁵

digitor

AM/FM Radio

A small compact AM/FM radio with a sturdy handle which makes it easy to take anywhere. Headphone output and retractable antenna. Requires 2xAA batteries.
Cat A 4350

$19⁹⁵

digitor

Solar Radio AS336

Single crystal high power solar cell. Auto power on/off in earphone jack. Built-in rechargeable NiCad battery. Backup battery compartment. Detachable carrying clip. Dynamic stereo earphone. Use 1 x AA battery (not included).
Cat A 4381

$29⁹⁵

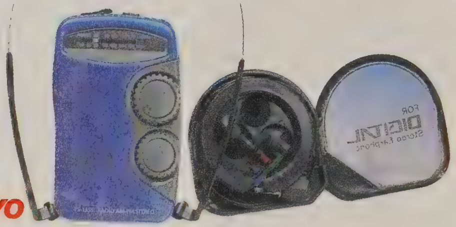
SOLAR CELL made in U.S.A.

digitor

Auto-Tune Pocket Radio

Auto-touch tuning makes this FM radio easy to tune when you're on the move! Complete with earphones for private listening.
Cat A 4322

$29⁹⁵



SANYO

Splashproof Radio

Great for around the pool, this AM/FM DC pocket radio is splash proof and includes earphones and carry strap. Needs 1 x "AA" battery or DC 1.5 volts. Dimensions: 65 x 100 x 27mm.
Cat A 4511

$34⁹⁵

SONY

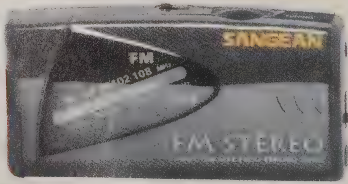
AM/FM Pocket Radio

You can take it wherever you go! A handy pocket radio with quality FM/AM sound and mono/ stereo switch. Complete with earphones. Requires 1xAA battery.
Cat A 5812

$54⁹⁵

SONY
FM
AM
POWER
FM/AM WALKMAN

NEW FOR '99



SANGEAN

Micro Radio SR-2

Pocket size, DBB (Deep Base Boost), Stereo/Mono switch, Stereo Earphones included. W x H x D in mm: 79 x 41 x 15. Weight: 38g without batteries.
Cat A 0159

$69⁹⁵

SONY

Desktop Radio

FM/MW/SW 3-band reception, available in black, built-in AC transformer, large built-in speaker. SW fine tuning, LED tuning indicator, tone control, AC/DC operation, manual tuning, telescopic antenna.
Cat A 5813

$69⁹⁵

NEW FOR '99

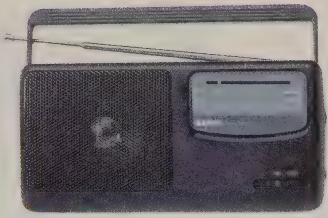
ALL WEATHER
SPORTS

digitor

Sports Radio AM/FM

This all-weather splash resistant model has a built-in wide-range speaker and runs on 2 x "AA" batteries (not included).
Cat A 4514

$26.95



SANYO

AM/FM Radio

High quality AM/FM stylish radio. Mains or battery powered. Requires 4xAA batteries.
Cat A 4139

$39.95

SONY

AM/FM Shortwave Radio

A high-quality Sony shortwave radio with clear FM/AM sound. It also offers shortwave fine-tuning with LED indicator and tone control for clarity of shortwave reception. Includes a built-in AC transformer, large built-in speaker and a 12-month warranty. Requires 4xAA batteries.
Cat A 5813

$69.95

Freeplay Radio

An amazing radio that doesn't run on batteries or power!!! This Freeplay radio has a handle which when wound for 30 seconds will produce 40 minutes playing time.
Cat A 0300

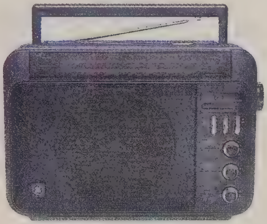
$139

SONY

Water Resistant Radio

Water resistant radio with 2 band reception and digital tuning so that you can set preset stations. Water resistant with a wrap around arm band and stereo earphones. Requires 2xAA batteries.
Cat A 5810

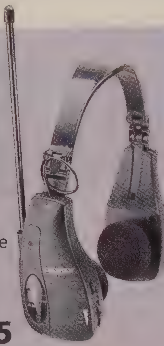
$149.95



Super Radio III

This high performance long range AM/FM portable radio has outstanding reception and outstanding station selectivity and sensitivity. With auto switching, auto frequency and bass and treble control, plus its two-way speaker system, it produces superb sound.
Cat A 4035

$159



digitor

Headphone Radio

Featuring AM/FM radio for music on the move. Requires 2xAA batteries.
Cat A 5910

$22.95

NEW FOR '99

Restroom Radio

This radio features an LCD clock, an emergency siren for safety, rotary control volume and a soft wire FM antenna. Uses 4 x "AA" batteries which are not included.
Cat A 2200

$26.95

digitor

Shower Radio

With AM/FM reception and water resistant casing. Uses 2 x "AA" batteries which are not included.
Cat A 4799

$27.95

NEW FOR '99

digitor

Clock Radio with Large Numbers

Rest your eyes on this AM/FM LED clock radio with large numbers! Features a 9 inch red LED digital display, 9 minute snooze alarm, 59 minute sleep setting, PM and auto indicator and battery backup.
Cat A 4354

$\$29^{95}$

digitor

Dual Alarm Clock Radio

In a stylish design, this clock radio provides dual alarms (one each), AM/FM radio, snooze/sleep functions, up and down time setting and buzzer/radio alarm option.
Cat A 4348

$\$44^{95}$

digitor

Travel Clock Radio

Perfect for people on the move, this clock radio is housed in a protective case. It features a large LCD display, snooze function, alarm/buzzer option and headphone jack for personal listening.
Cat A 4671

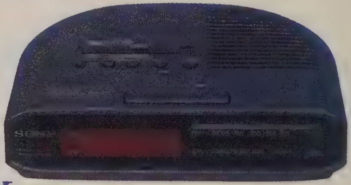
$\$46^{95}$

digitor

AM/FM Clock Radio

Battery back-up makes this alarm ultra reliable so you'll never be late! Wake to AM/FM radio or buzzer. With snooze/sleep functions.
Cat A 4347

$\$24^{95}$



SONY

Digital Clock Radio

A reliable Sony 'dream machine' clock radio with red clock display. Its features include AM/FM radio, power backup and a snooze function.
Cat A 5814

$\$39^{95}$

AM
PM
12:35
FM
AM
SONY

SONY

Dual Alarm Clock Radio

A stylish dual alarm clock radio. Features include AM/FM reception, power backup and LED clock display. Requires 9 volt backup battery. Available in black and white.
Cat A 4686

$\$44^{95}$

NEW FOR '99

digitor

Clock Radio Soother

Dual alarm clock radio with EL "style" cool blue back light. Snooze to the soothing sounds of bird morning chorus, frogs chirping in a pond, waves crashing on the beach and rain forest sounds. Includes adaptor (requires 2 x "AA" batteries) or use 4 x "C" batteries. Large LCD display that displays time, temperature and calendar Year 2000 compliant (1969 – 2069).
Cat A 4326

$\$79^{95}$

digitor

Personal Radio Cassette

Dynamic bass boost system, stereo headphones, automatic stop function, built-in adjustable stop function, built-in 3V DC jack. Uses 2 x "AA" batteries (not included).
Cat A 4899

$\$26^{95}$

digitor

Personal Radio Cassette

Ultra compact stereo radio cassette, AM/FM radio. Deep bass boost.
Cat A 4898

$\$34^{95}$

SANYO

VIP 30 Sportster AM/FM Stereo

Digital Tuner with preset stations. Digital clock with alarm and timer. Auto stop cassette deck. Bassxpander Sound System. Black only.
Cat A 4503

$\$39^{95}$

SONY

WM-FX141 AM/FM Radio Cassette Walkman

AM/FM stereo tuner, 13 hours playback (alkaline), auto-shut off (playback), anti-rolling mechanism, automatic volume limited system (AVLS).
Cat A 4241

$\$59^{95}$

digitor

Personal Radio Cassette Recorder

Built-in speakers and mic make this recorder convenient and simple. It features AM/FM stereo receiver, stereo cassette player, one-touch recording system, built-in dual stereo speakers, built-in mic, FM stereo LED indicator, built-in 3V DC input jack and professional stereo headphones (Featuring single-side cord). Needs 2 x "AA" batteries (not included).
Cat A 4280

$\$74^{95}$

SANYO

VIP 90 Sportster

A quality compact AM/FM stereo radio with 3 band graphic equaliser, auto reverse, bassxpander, 3 button control and inner earphones. Requires 2 x "AA" batteries.
Cat A 4185

$\$79^{95}$

digitor

Personal Radio Cassette

Features an AM/FM digital synthesised tuner, auto reverse, 10 preset buttons, built-in dynamic bass boost, auto scan up and down, professional stereo headphones and a 3V DC jack. Needs 2 x "AA" batteries (not included).
Cat A 4193

$\$79^{95}$

SANYO

VIP 120

AM/FM digital tuner with 10 preset stations. Digital clock with alarm and timer. Auto stop cassette deck. Bassxpander sound system. Preset scan, manual tuning, 4 button control (play, FF, RWD, stop), inner ear type headphones, LCD display, anti rolling mechanism. Pin point tuning accuracy. 5 FM and 5 AM stations can be preset.
Cat A 4509

$\$89^{95}$

SONY

Auto Reverse Walkman WMFX373

AM/FM stereo tuner, auto reverse function and Mega Bass. Earphones included. Requires 2 x "AA" batteries or 3v adaptor plug (A4221).
Cat A 4233

$\$99^{95}$

SONY

Walkman AM/FM WMFX271

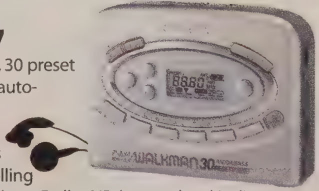
AM.FM tuner, digital tuner, 30 preset stations (25 x FM, 5 x AM), single direction, 20 hours playback (alkaline), 24 hours playback (stamina). Anti-rolling mechanism, automatic volume limiter system (AVLS), mega bass (on/off), carry case, Dolby NR, battery level indicator on LCD.
Cat A 0381

$\$109^{95}$

Not available until June

SONY

Walkman WMFX477



AM/FM tuner, digital tuner, 30 preset stations (25 x FM, 5 x AM), auto-reverse mechanism, mega bass (on/off), 20 hours playback alkaline, 24 hours playback (stamina). Anti-rolling mechanism, feather touch keys, Dolby NR, battery level indicator on LCD, carry case, automatic volume limiter system (AVLS).
Cat A 9200

Not available until end of May

$\$149$

NEW FOR '99

SANYO CDP-1000

New anti-shock system, anti-rolling, anti-shock 10sec. Digital bassxpander sound system. LCD display and button CD lid. 24 music random memory, random play, repeat play (one/all/program). Rechargeable, TGT size 135 (w) x 23.5/max.28(h) x 155(d)mm. TGT battery life 12 hour (alkaline). Accessories include AC adaptor, HP, NiCad batt"NBP-30B" and patch cable.

Cat A 4518

Available mid July

$179.95

NEW FOR '99

CDP-1000CR AU
With Car Kit
Car adaptor
Car connection pack

SANYO CDP-1000CR

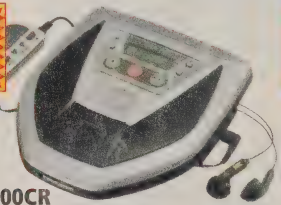
New anti-shock system, anti-rolling, anti-shock 10sec. Digital bassxpander sound system. LCD display and button CD lid. 24 music random memory, random play, repeat play (one/all/program). Rechargeable, TGT size 135 (w) x 23.5/max.28(h) x 155(d)mm. TGT battery life 12 hour (alkaline). Accessories include AC adaptor, HP, NiCad batt"NBP-30B", patch cable and car kit.

Cat A 4528

Available mid July

$199.95

NEW FOR '99



CDP-4000CR

New anti-shock system, anti-rolling, anti-shock 10sec. Digital bassxpander sound system. LCD display and button CD lid. 24 music random memory, random play, repeat play (one/all/program). Rechargeable, TGT size 135 (w) x 23.5/max.28(h) x 155(d)mm. TGT battery life 12 hour (alkaline). Accessories include AC adaptor, HP, NiCad batt"NBP-30B" and patch cable.

Cat A 4499

Available mid July

$249.95

NEW FOR '99

SONY
Discman D191

Entry level discman, 1 bit DAC, hold switch, digital mega bass. Automatic volume limiter system (AVLS), 10 hour playback (alkaline), 14 hour playback (stamina), digital volume control.

Cat A 5485

Available May-June

$199

NEW FOR '99

SONY
Discman D192 CK

Car kit discman, 1 bit DAC, hold switch, digital mega bass, automatic volume limiter system (AVLS), digital volume control, various play modes – normal, repeat (1/all/shuffle). AC adaptor supplied, groove, earphones supplied, car kit supplied (mounting plate, car connection kit, DC power supply), AMS.

Cat A 5490

Available May-June

$229

ESP² SQUARED

Now Sony introduces ESP2, setting a new standard in electronic shock protection technology.

The ESP2 technology is capable of effectively reading a CD even if the CD rotation speed varies by up to 50%. A new Advanced Digital Signal Processor and a RAM controller organise data into continuous and manageable data packets.

NEW FOR '99

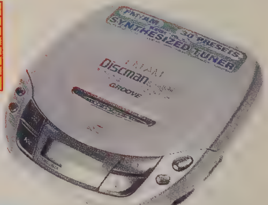
SONY Discman DE-446CK

Car discman with electronic shock protection (ESP²). 1 bit DAC, digital mega bass, random music sensor (RMS), hold switch, resume, automatic volume limited system (AVLS). Groove, 12 hour playback (alkaline), 16 hour playback (stamina). AC adaptor and earphones supplied, car kit supplied (car connection kit, DC power supply), line out, AMS, various play modes – normal, repeat (1/all/shuffle).

Cat A 0266

$279

NEW FOR '99

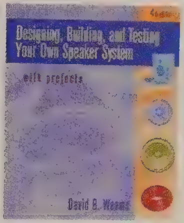


SONY
Discman DF411

1 bit DAC, electronic shock protection (ESP²), 10 hour playback (alkaline), 14 hour playback (stamina), synthesized digital tuner, 30 present stations. Random music sensor (RMS), resume, groove, automatic volume limiter system (AVLS), AC adaptor and earphones supplied.

Cat A 5827

$349



Designing, Building & Testing your own Speaker System 4th Edition Book

Projects and step-by step instructions on choosing the right speakers, set up a home system, building speakers and how to evaluate speakers by ear.
Cat B 1264

$49.95

digitor

Rear Speakers DC3070

Ideal as rear speakers in your home theatre system. Complete with wall or stand mounting brackets. Features 100W peak power output per pair, 50W RMS output per pair, two-way bass reflex system, 8 ohm impedance, 3 1/2" long excursion woofer, 1" super polymer tweeter, heavy-duty ABS cabinet, pop-off wire mesh grills, spring-loaded terminals, size 121 x 191 X 197mm (WHD), frequency response 70Hz-20kHz.
Cat A 9765

$89.95

Speakers

Using advanced infrared technology, these speakers are ideal for stereo TV hi-fi, multimedia and surround sound! With individual volume controls and range up to 10m, they're portable and easy to install with no wiring required. Requires 8 x "D" batteries or 2 x 6V 600mA DC adaptors.
Cat C 4233

$159

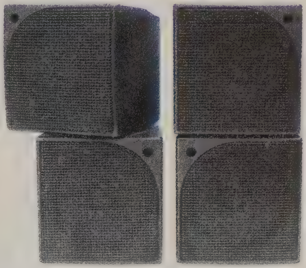
digitor

Main Speakers DC4070

Perfect for your home theatre system as main or rear speakers. Includes 2 heavy-duty fully-rotational stands. Features 200W peak power output per pair, 100W RMS output per pair, two-way bass reflex system, 8 ohm impedance, 5" long excursion woofer, 1" super polymer tweeter, Ferro Fluid for enhanced performance, vented bass reflex design for low bass response, heavy-duty ABS cabinet, pop-off wire mesh grills, spring-loaded terminals, size 241 x 159 x 146mm (WHD), frequency response 60Hz-20kHz.
Cat A 9766

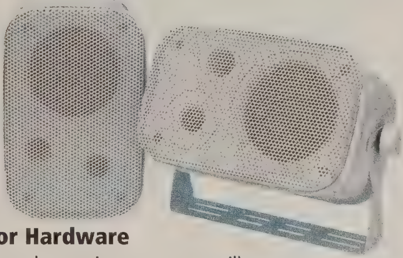
$169

Swivel Speakers



Ideal for use as home theatre satellite speakers. A handsome swivel speaker system.
Cat A 9775

$79.95



Outdoor Hardware

Stainless steel acoustic transparent, grill fittings plus polypropolyne cone speakers ensures long lasting outdoor use. White only. Complete with wall or stand mounting brackets.
Cat A 9774

$99.95

digitor

Centre Speakers

Ideal for use as a centre or main speakers in a home theatre system. Includes heavy-duty fully-rotational stand. Features 80W peak power output, 40W RMS output, three-way bass reflex system, 8 ohm impedance, 5" woofer, 5" midrange, 1" mylar tweeter, spring-loaded terminals, frequency response 80Hz-20kHz, size 430 x 162 x 155mm (WHD).
Cat A 9769

$169

digitor

Main Speakers DC5070

Has 2 heavy-duty fully-rotational stands, 240W peak power output per pair, 120W RMS output per pair, 2-way bass reflex system, 8 ohm impedance, 6 1/2" long excursion woofer, 1" super polymer tweeter, 1" 4-layer high temperature aluminium voice soil, vented bass reflex design for low bass response, heavy-duty ABS cabinet, pop-off wire mesh grills, spring-loaded terminals, size 272 x 178 x 161mm (WHD), frequency response 50Hz-22kHz.
Cat A 9767

$199

Audio – Portable CD/Radio Cassette

NEW FOR '99

PHILIPS

CD 'Big Sound' Machine

Incredible surround sound, bass reflex speaker system, CD player, analogue tuner and single cassette deck. Dynamic bass boost, 2 way speaker and 80 watt PMPO.

Cat A 2021 **$229**

NEW FOR '99

SANYO

MCD-Z90F

Compact form with top-loading CD. BASSXPANDER sound. Single cassette deck. CD-to-tape synchronised dubbing. FM/AM 2-band analog tuner. CD 16-memory and repeat. 2.0W/ch at DC, 1.5W/ch at AC. 10cm full range speaker.

Cat A 0199

Available in June

$169^95

NEW FOR '99

300W
PHILIPS
dynamiaX

PHILIPS

CD AZ2000

Features incredible surround sound, ultrabass, bass reflex speaker system, dynamic bass boost, CD player, analogue tuner, single cassette, 4w x 2 RMS. New style design.

Cat A 2020

$299^95

Micro Systems

NEW FOR '99

SANYO

Micro System DC-DA100

Output power 6W/ch (1kHz, 10% THD). Multi function LCD w/backlit. Top loading CD player. Jog dial volume, wide surround, 4-mode sound preset, BASSXPANDER, video (audio) in. Piano type single deck, CD synchro rec, 16-selection program, 1-bit D/A convert, repeat/random play. 36-preset (FM24/AM12) digital tuner, auto tuning/APT. Timer, clock sleep. 27 key remote w/10key. !0cm full range wooden speaker.

Cat A 4533

Available in August

$299^95

NEW FOR '99

SHARP

Micro System XL-505W

Features full logic cassette mechanism, full remote control, AM/FM synthesizer tuner with 30 presets, 3 mode pre-programmed graphic equaliser, CD with synchro recording, X-BASS, clock-timer-sleep function, 5w/channel RMS and stylish, modern micro design and colour scheme.

Cat A 2022

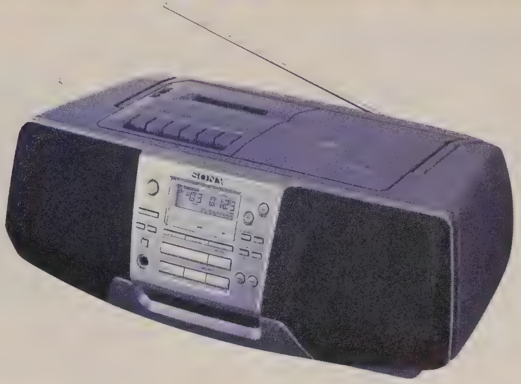
$299

SONY

CD Radio Cassette with Digital Tuner CFDS28

Features AM/FM digital tuner, 1 Bit DAC, Mega Bass, Single Tape deck, AMS, 20 song Random Music Sensor (RMS), Repeat Function (1/all), Shuffle Function and Tone control. Also has 4 preset sound modes, Sleep timer function, Digital tuner, 10 station preset, CD-tape Synchronised dubbing, Auto-shut off, Soft eject deck, 130W PMPO.
Cat A 5497
Available June 1999

$269



SONY

Portable Radio Cassette

AM/FM mono radio cassette, full auto-shut off with built-in microphone, earphone jack and AC/DC operation. Requires 3 x "D" sized batteries. Also available in black.
Cat A 5811/A 4229

$79.95

SANYO

Portable CD Cassette Player MCDX75

Funky new style top loading CD player, AM/FM radio, single tapedeck with easy to use volume controls.
Cat A 4259

$189.95

Audio/Video Fluid

25ml sealed bottle.
Cat C 7511

$8.95 ea

Wet Type Cleaner

Cat C 7087

$12.95 ea

Cleaner & Demagnetiser

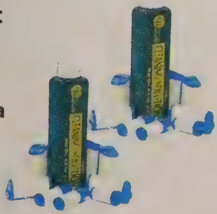
Cat C 7503

$16.95 ea

Replacement Cleaner Kit

Cat C 3713

$16.95 ea



Deluxe Cleaner

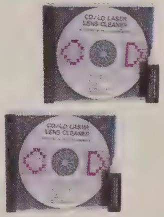
Cat C 7090

$19.95 ea

CD Lens Cleaner

Cleans the sensitive laser lens used in CD and CD-ROM systems. Effectively removes build-up and debris.
Cat C 7119

$24.95



Notetakers

digitor

Standard Notetaker

This voice-activated notetaker has one-touch recording and an auto stop. Includes a built-in wide range speaker, built-in microphone, LED record indicator, built-in carry strap, 3-volt DC input jack and built-in headphone jack. Requires 2 x AA batteries (not included).

Cat A 5349 $\$56^{95}$

One Touch Recording
LED Level Indicator
Front Speaker

SONY

Standard Notetaker 333

One-touch recording, offering cue, review and auto-stop functions, plus an edit function and front speaker. Requires 2 x "AA" batteries.

Cat A 5815 $\$79^{95}$

digitor

Personal AM/FM Radio Cassette Recorder

This AM/FM stereo player has "one-touch" recording system, built-in dual stereo speakers, built-in microphone, FM stereo LED indicator, built-in 3V DC input jack and professional stereo headphones featuring a single-side cord. Needs 2 x AA batteries (not included).

Cat A 4280 $\$79^{95}$

Clear Voice

SONY

Standard Notetaker TCM353/453V

Voice activated. Front speaker, one-touch recording, cue and review, auto shut off, mic jack, earphone jack, stereo headphone compatible. Requires batteries.

Cat A 5823 $\$99^{95}$

SANYO

Standard Notetaker M1110C

Compact cassette recorder handheld. Output power 120mW (DC max). Auto stop mechanism (record and play), 3-digit tape counter. Voice activated recording system. Electric pause switch. Operation/battery/LED indicator. Jacks EXT-Mic/Earphone. Rechargeable capability.

Cat A 4711 $\$99^{95}$

NEW FOR '99

SONY

Voice Activated Standard Notetaker with Pop-up Microphone TCM465

Front speaker, one touch recording, cue marker, auto-shut off, pause switch, battery indicators. Pop-up uni-directional mic, hand strap, variable speed playback, mic jack, tape counter, earphone jack, stereo headphone compatible (monaural sound).

Cat A 5825 $\$169$

Desktop Recorders

digitor

Cassette Recorder

A small portable cassette recorder suitable for notetaking, computer data recording or just listening. With automatic level control recording, tape counter, mic jack and AC power cord. Requires 4 x C sized batteries.

Cat A 4031 $\$59^{95}$

SONY

Cassette Recorder

A high quality cassette recorder with all the functions you need for desktop recording including one-touch recording, edit function, tape counter and auto-stop cassette. Includes power adaptor.

Cat A 4888 $\$89^{95}$

digitor

Micro Notetaker

Features micro cassette recorder, in-built microphone, lapel microphone. Cassette included, 2 x AA batteries, 2 speed, counter, 12 month warranty. Voice activated, adaptor to suit M 9631.
Cat A 5347

$69.95

SONY

Micro Cassette Notetaker M437/M430

Ideal for taping lectures, meetings or conferences – this is an inexpensive slim-designed microcassette notetaker with one-touch recording and two tape speeds. It also offers cue and review functions, pause, earphone jack and 3V DC in jack. Requires 2 x "AA" batteries.
Cat A 5817

$89.95

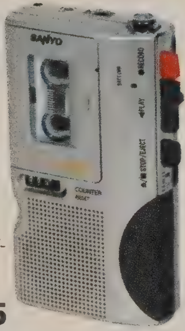
AUTO SHUT OFF
m-430
MICROCASSETTE-CORDER

SANYO

Micro Notetaker M5799

Microcassette recorder handheld. Output power 120mW (DC max). Auto stop mechanism (record and play). Dictating/Conference Rec. Switch. 3-digit tape counter. Voice activated recording system. Electric pause switch. Operation/Battery LED Indicator. Jacks EXT-Mic/Earphone. Rechargeable capability
Cat A 4713

$99.95



SONY

Micro Notetaker M539V/530V

Perfect recording is easy thanks to this voice activated notetaker which includes fast playback, battery indicator and cue and review functions. Requires 2 x AA batteries.
Cat A 5819

$99.95

AUTO SHUT OFF
TAPE COUNTER

SONY

Voice Activated Micro Notetaker with Cue Marker M729V/M730V

This quality notetaker is packed with features including one-touch recording, 2 tape speeds and tape counter. Requires 2 x AA batteries.
Cat A5818

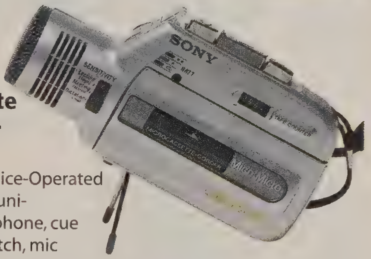
$139

SONY

Micro Cassette Notetaker M-100MC

For lecture use. Voice-Operated Recording (VOR), uni-directional microphone, cue marker, pause switch, mic sensitivity switch, built-in stand. Battery indicator, fast playback, earphone jack, tape counter, hand strap.
Cat A5478

$179



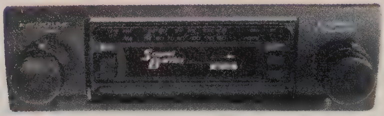
OLYMPUS

Complete Office Dictation Pack

This office starter pack includes a transcriber complete with foot control and headset. A fully featured notetaker model (S724), telephone pick up, cleaning cassette, batteries and tapes are all included! All this to get you started at a great pack price.
Cat A 5474

$699

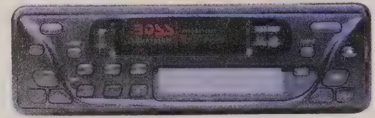
CUSTOMER ORDER ONLY



SOUND BARRIER QUALITY AUTO STEREO SOUND

KC20 Cassette/Radio

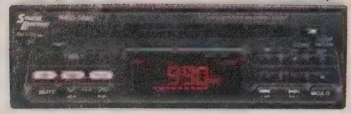
AM/FM analog tuning radio. Auto stop/fast forward cassette mechanism. Rotary on-volume, balance and tone control. Tape and stereo LED indicator. Mono/stereo selector. 2 x 7 watts power output. 6 gang metal tuner.
Cat A 9502 **$79.95**



SOUND BARRIER QUALITY AUTO STEREO SOUND

KC202 Radio/Cassette

AM/FM radio cassette. Fully security detachable face. 20 x 2 watt output front and rear. 30 station preset memory (FM 18 AM 12). Bass treble balance and fader controls. AM 520-1610KHz. FM 87.5-108MHz. RCA line output. CD line output.
Cat A 5558 **$219**



SOUND BARRIER QUALITY AUTO STEREO SOUND

KCD 1010 Car CD Player/Radio

High power front loading CD and AM/FM radio. 2 x 25 watts power output. Detachable front panel for security. Electronic volume control. LCD multi function display. RCA line output. 30 station present memory. Anti shock CD mechanism.
Cat A 9510 **$349**

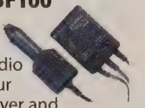
Car CD Kit

Easily fitted to almost any vehicle and compatible with most makes of portable CD players. This kit features anti-vibration cradle and flexible mount arm. Comes with CD cassette adaptor and universal power adaptor (plugs into cigarette lighter).
Cat C 9211 **$69.95**

PHILIPS CD Cassette Adaptor Set

Allows you to play your portable CD player through your car stereo cassette. Plus, it powers the CD player from the car battery so you'll save on batteries!
Cat C 9220 **$49.95**

Mobile Audio Connector SF100



Requires no wiring! Simply converts the audio signals from your portable CD player and transmit them via an FM radio frequency to your car radio. Includes power supply (300mA maximum output).
Cat C 9207 **$56.95**

CD Cassette Car Adaptor

The CD-55 car adaptor allows you to connect your portable CD player into the cassette player in your car by simply plugging it into the headphone socket on the CD player.
Cat C 9212 **$44.95**

SOUND BARRIER QUALITY AUTO STEREO SOUND

KC40 Cassette/Radio with Detachable Face

AM/FM radio cassette. Detachable face. Auto stop. CD input jack. Local/distance selection. LED display. FM 87.5MHz-108.5MHz. AM 520-1640KHSz. 4 watts power output.
Cat A 5559 **$129**

SOUND BARRIER QUALITY AUTO STEREO SOUND

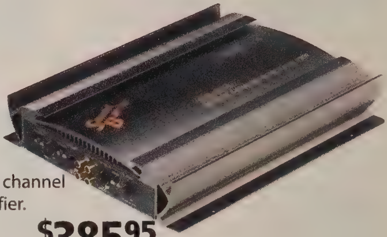
Mosfet Power Amplifier GA2050

100W x 2
Sound Barrier

50 watt RMS x 2 channel bridgeable amplifier.
Cat A 9545 **$229.95**

SOUND BARRIER QUALITY AUTO STEREO SOUND

Mosfet Power Amplifier GA4050



50 watt RMS x 24 channel bridgeable amplifier.
Cat A 9560 **$385.95**

Gold DC Power Connectors

Gold Battery Terminals

Positive Terminal D6104
Negative Terminal D 6106 **$12.95**

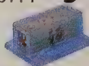
Gold Vehicle Battery Terminals

Positive Terminal D6100
Negative Terminal D 6102 **$12.95**

Gold Power Lugs

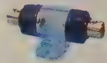
For 8GA cable	D 6112	$8.95
For 4GA cable	D 6114	$9.95

Power Distribution Block



D 6120 **$12.95**

Gold In-Line Fuseholder

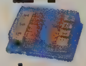


D 6118 **$11.95**

Fused Power Distribution Block

D 6122 **$24.95**

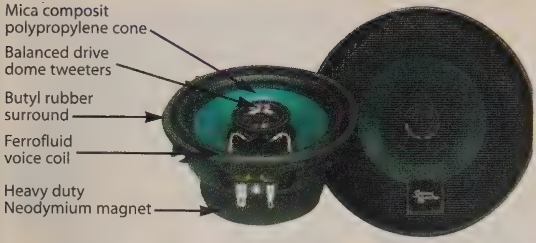
Fused Power Distribution Block



D 6124 **$34.95**

5AG Gold Fuses

20 Fuses D 6132
30 Fuses D 6134
40 Fuses D 6136
50 Fuses D 6137
60 Fuses D 6138
$3.95


Mica composit polypropylene cone
Balanced drive dome tweeters
Butyl rubber surround
Ferrofluid voice coil
Heavy duty Neodymium magnet

SOUND BARRIER
QUALITY AUTO STEREO SOUND

HR Speakers

Surface mount tweeter 150W	A 0705	$\$89^{95}$
HR400 4" (100mm) 100W	A 0700	$\$94$
HR500 5¼" (125mm) 120W	A 0701	$\$129$
HR650 5½" (165mm) 160W	A 0702	$\$129$
HR690 6" x 9" (150x235) 200W	A 0703	$\$199$

digitor

Automotive Antennas

Antenna replacement mast **NEW**	A 7314	$\$12^{95}$
Lockdown antenna	A 7300	$\$19^{95}$
Inside window mount antenna	A 7301	$\$24^{50}$
Side mount antenna	A 7344	$\$26^{95}$
Rubber duck antenna	A 7345	$\$24^{95}$
Antenna with ball base	A 7346	$\$24^{95}$
Antenna auto black with boost	A 7320	$\$24^{95}$
Antenna ball with booster	A 7347	$\$26^{95}$
Antenna AM/FM whip 30"	A 7310	$\$37^{95}$
Antenna auto electric	A 7366	$\$62^{50}$

FM Band Expander

Easy to install and enables Japanese Fm car radio to receive NZ FM stations.

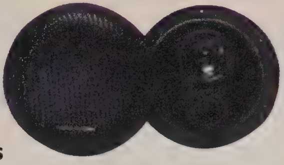
Cat A 3005 $\$39^{95}$

To Set
To Aerial
Red Wire to
• A.C.C. Switch
Copyright
© Electronic Developments 1992
Jap to NZ FM
Radio Converter
Model No. P.B.2000

High Quality FM Band Expander

Covers frequency range from 86-108MHz.

Cat A 3002 $\$69^{95}$



SOUND BARRIER
QUALITY AUTO STEREO SOUND

JR Speakers

Car speakers 4" dual cone JR101	A 9651	$\$36^{95}$
Car speakers 4" two-way JR202	A 9656	$\$44^{95}$
Car speakers 5.25" two-way JR404	A 9666	$\$52^{50}$
Car speakers 6.5: three-way JR606	A 9676	$\$67^{20}$
Car speakers 6 x 9" three-way JR909	A 9681	$\$94^{50}$
Speakers 6 x 9" JR910	A 0707	$\$109^{95}$

SOUND BARRIER
QUALITY AUTO STEREO SOUND

Sub Woofer

Sub woofer AW100 250W	A 0706	$\$89^{95}$

Acoustic Parameters

Z (ohm)	4.0	Qes	0.68	Pmax (W)	250.0
Re (ohm)	4.14	Qts	0.61	Spl9DB (w/m)	88.7
Fs (Hz)	32.81	Vas (l)	94.82		
Qms	6.27	Cms(m/n)	0.68		
		Mms	34.49		

Accessories

Speaker space for 6" speaker **NEW**	A 0798	$\$18^{95}$
Speaker space for 6" x 9" **NEW**	A 0799	$\$22^{50}$

digitor Ground Loop Isolator
digitor Power Noise Filter
digitor Power Noise Filter
digitor Line Out Converter

digitor

Car Audio Accessories

Noise suppressor cap. 0.5UFD	A 7902	$\$9^{95}$
Antenna auto extension lead 1m	A 7450	$\$9^{95}$
Mounting bracket set	A 7200	$\$16^{95}$
Antenna line booster	A 7313	$\$19^{95}$
Line out convertor **NEW**	A 7303	$\$29^{95}$
Group loop isolator **NEW**	A 7305	$\$32^{50}$
Power noise filter 10A **NEW**	A 7304	$\$37^{00}$
Power noise filter 30A **NEW**	A 7302	$\$59^{95}$

Tapes – Audio/Video/Camcorder/Notetaker

Audio

TDK

AD-60 2 Pack

2 pack of 60 min audio tapes.
Cat C 4023 $6.95

AD-90 2 Pack

2 pack of 90 min audio tapes.
Cat C 4024 $7.95

D-60 3 Pack

3 pack of 60 min audio tapes.
Cat C 4022 $8.95

D-90 3 Pack

3 pack of 90 min audio tapes.
Cat C 4017 $9.95

D-90 10 Pack

10 pack of 90 min audio tapes.
Cat C 4034 $19.95

SONY

C 3104 CDIX 10 min Tape	$2.95
C 3119 EF60	$2.95
C 3102 HF46	$2.95
C 3100 HF60	$3.95
C 3121 EF90	$3.95
C 3110 HF90	$4.95
C 3101 HF120	$6.95
C 3115 C90	$6.95
C 3114 C60	$5.95
C 3101 HF120	$6.95
C 9242 EF90 5pk	$9.95
C 3103 HF60 3pk	$8.95
C 3113 HF90 3pk	$9.95

PHILIPS

C90 3 Pack

3 pack of 90 min audio tapes. Cat C 9101 $5.95

C60 5 Pack

5 pack of 60 min audio tapes. Cat C 9102 $6.95

C60 3 Pack

3 pack of 60 min audio tapes. Cat C 9100 $4.95

Video

SONY

VHS Tape E180DXE

180 min VHS video tape.
Cat C 3221 $3.95

E60V Single

Cat C 3216 $6.45

E240V Single

Cat C 3214 $9.95

TDK

VHS Tape E-180HS

180 min VHS video tape.
Cat C 4010 $6.95

VHS Tape E-240HS

240 min VHS video tape.
Cat C 4011 $7.95

VHS Tape E-180EHG

240 min VHS video tape.
Cat C 4012 $7.95

PHILIPS

Video Tape

180min Cat C 9103 $3.95

VHS 4 Pack

240 pk Cat C 5230 $19.95

Video Tape

240min Cat C 9104 $7.95

Notetaker Tapes

digitor

Micro Cassettes

In handy packs of three.
30 min Cat C 3371 $12.95pk
60 min Cat C 3373 $14.95pk

SONY

Micro Cassettes

Pk 3
Cat C 3365 $16.95

Micro Tape

Single
Cat C 3369 $5.95

TDK

60 min 3pk Cat C 3364 $11.95

Micro Cleaning Tape

Rid your machine of damaging dust and keep your other tapes running smoothly.
Cat C 7096 $5.95

Answerphone Tapes

Outgoing Messages. Spool-less tapes for answering machines.

15 sec Cat C 3310	$16.95
30 sec Cat C 3311	$16.95
60 sec Cat C 3312	$16.95

Mini Disc

It's the future of audio recording. A digital format, MiniDisc combines the advantages of CD and cassette in a single format, providing crystal clear digital sound, plus the ability to record and re-record onto a format that fits in your pocket.

Camcorder

PHILIPS

8mm 90min Tape

Cat C 9105 $13.95

TDK

8mm Tape P5-90HS

90 min 8mm tape
Cat C 4014 $14.95

SONY

8mm Tape P5-90MP1

90 min 8mm tape
Cat C 3280 $19.95

8mm Tape P5-120MP1

120 min 8mm tape
Cat C 3281 $24.95

Hi8 Video Tape P5-90HMP

90 min Hi8 8mm tape
Cat C 3283 $29.95

Mini Disks

SONY

Media MDW74B

Cat C 9243 $12.95

Media MDW74R

Cat C 9244 $12.95

Media MDW74Y

Cat C 9245 $12.95

Media MDW60

Cat C 9246 $10.95

Media MDW674

5 pack with 20 disc carry case.
Cat C 4064 $59.95

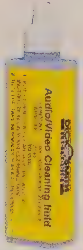
SONY
SONY
CL
CLEANING

SONY

Micro Cleaner

Cleans all micro audio units.
Cat C 7096

$5.95ea


DICK SMITH
Audio/Video Cleaning fluid

Audio/Video Fluid

Suitable as replacement fluid for wet head cleans. 25ml sealed bottle.
Cat C 7511

$8.95

DICK SMITH
Cassette Head Cleaner

Cassette Cleaners

A range of cassette cleaners and demagnetisers to care for and maintain your favourite tapes.

Wet Type Cleaner
Cat C 7087

$12.95

Replacement Cleaner Kit

Cat C 3713

$16.95

DICK SMITH
Cassette Cleaner/Demagnetiser

Cleaner & Demagnetiser

Cat C 7503

$16.95

Deluxe Cleaner

Cat C 7090

$19.95

DICK SMITH
8mm Video Camera Head Cleaner

8mm Head Cleaner

An effective cleaner that does the job in a matter of minutes.
Cat C7123

$22.50

DICK SMITH
VHS Video Head Cleaner

VHS Head Cleaner

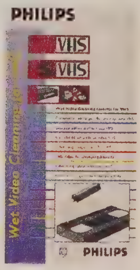
Care for and prolong the life of your video tape collection with this VCR head cleaner.
Cat C7124

$24.50

VHS Head Cleaning Kit

Just pop in the cleaning tape to improve the picture and prolong the life of your tapes and VCR.
Cat C7100

$24.95


PHILIPS
VHS
VHS
Wet Video Cleaning
PHILIPS

CD/LD LASER LENS CLEANER

CD Lens Cleaner

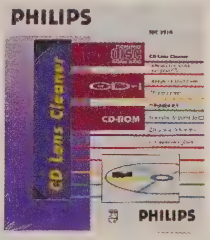
Cleans the sensitive laser lens used in CD and CD-ROM systems. Effectively removes build-up and debris.
Cat C 7119

$24.95

CD Lens Cleaning Kit

Cleans laser lenses on CD, CD-I and CD-ROM machines. Eliminates dust and debris build-up.
Cat C 7116

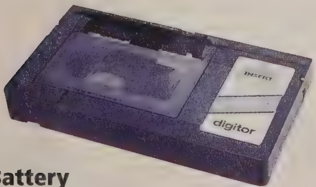
$26.95


PHILIPS
CD Lens Cleaner
DISC
CD-I
CD-ROM
PHILIPS

VHS-C Camera Tape Adaptor

Plays VHS-C tapes in your VHS VCR.
Cat C 3022

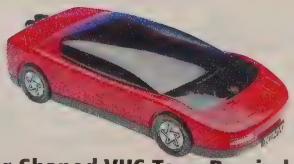
$44.95


INSERT
digitor

Battery Operated VHS-C to VHS Adaptor

Cat C 3018

$52.95



Car Shaped VHS Tape Rewinder

Rewind your tapes with ease! Just load your tape into the rewinder and watch another video on your video recorder.
Cat C 3716

$54.95

Cleanermate
VIDEO TAPE CLEANER

Video Cleaner and Winder

This cleaner keeps your tapes free from grime and rewinds your tapes. You can watch another video while you wait!
Cat C 3712

$99.95

Earphones

digitor Stereo Earphones

With no headband you'll hardly realise you're wearing them. Complete with spare ear pads, 3.5mm plug and 6.5mm adaptor plug.

Cat C 4135

$12.95

digitor
C4135

digitor Deluxe Stereo Earphones with Case

Just the thing for portable stereos! Includes case and gold plated 3.5mm stereo plug. With 21 ohms impedance and a wide frequency response of 20-20,000Hz.

Cat C 4350

$19.95

SONY Fontopia Earphones MDR-E821LP

Silent cap, 13.5mm diameter driver unit, twin turbo ducts, nickel-plated L-shaped stereo mini plug, 1.0m "Y" shaped lead and compact case supplied.

Cat C 4450

$19.95

SONY Fontopia Earphones MDR-831LP

Silent cap, 13.5mm diameter driver unit, twin turbo ducts, nickel-plated L-shaped stereo mini plug, 1m "Y" shaped lead. Compact case supplied. Thin housing.

Cat C 4402

$39.95

SONY
fontopia

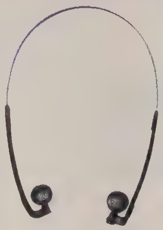
Vertical In-Ear Headphones

digitor Two-Way Stereo Headphones with Detachable Earphones

You can wear them as mini stereo headphones, or detach the speakers and instantly they're stereo earphones! The small drivers give great sound reproduction with 21 ohms impedance and frequency response of 20-20,000 Hz.

Cat C 4133

$16.95

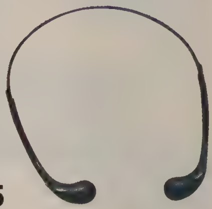


SONY In-Ear Headphones MDRW08L

Streamlined for a comfortable fit, these headphones give a neat performance. Vertical ear-conscious, 13.5mm diameter, twin turbo ducts and stereo mini plug.

Cat C 4418

$19.95



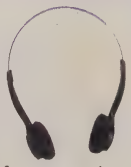
Lightweight Headphones

digitor Stereo Headphones

Ideal for personal and portable stereos or your home hi-fi, these inexpensive stereo headphones come with adjustable headband and replaceable foam earpads. 32 ohms impedance and frequency response of 20-18,000Hz.

Cat C 4142

$16.95



SONY Open-Air Stereo Headphones MDR-101LP

NEW FOR '99

"Turbo" acoustic duct for powerful mega bass reproduction. 30mm diameter driver unit. Stereo mini plug. Folding headband. 1m cord length.

Cat C 4452

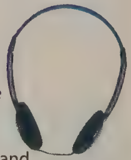
$19.95

digitor Deluxe Stereo Headphones

The 27mm drivers cover the entire ear without bulk. Has a 3.5mm plug for your personal stereo equipment and a 3.5mm to 6.5mm adaptor for your home stereo. 32 ohms impedance and frequency response of 20-18,000Hz.

Cat C 4146

$26.95



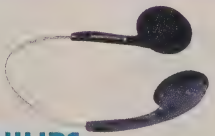
Earpieces, Earphones & Headphones

digitor Earphone

Over ear earpiece with 3.5mm plug and 1.5m lead.

Cat C 4536

$12.95



PHILIPS Lightweight Headphone

Ideal for most portable and personal stereo equipment.

Cat C 0001

$15.95

PHILIPS Headphone SBCHP100

Lightweight, comfortable headphone with ultra modern design.

Cat C 4221

$29.95

SONY Street Style Headphones MDRG56V

NEW FOR '99

Behind the neck headband. 30mm dia. drives unit, 'turbo' acoustic duct for powerful megabass sound. Volume control on headphone cord.

Cat C 9201

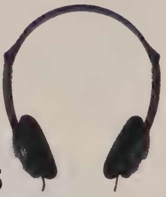
$59.95

TV Headphones

digitor TV Headphones
With Volume Control

Sit back, relax and watch TV without disturbing others. Features stereo/mono adaptor, 34mm drivers with neodynium magnets, 32 ohm impedance, 102dB sensitivity, 20-20,000 frequency response and an extra long cord.
Cat C 4623

$29.95



digitor Deluxe TV Headphones
With Volume Control

They're just the thing for private listening, with extra padding for greater comfort and large 40mm speaker drivers. They come with a 3m cable, gold plated 3.5mm plug and uni-match adaptor. 32 ohms impedance and frequency response of 20-20,000Hz.
Cat C 4162

$52.95

Mid/Full Size Headphones

digitor HiFi Stereo Headphones

Lightweight and very comfortable, these stereo headphones are perfect for listening to your CD player or home stereo. They have large 40mm speaker drivers which give exceptionally good sound. Includes a 3.5mm plug and 3.5mm to 6.5mm adaptor for connection to your home stereo. 32 ohms impedance and 20-20,000Hz frequency response.
Cat C 4148

$39.95

digitor Pro-Monitor HiFi Headphones

High quality stereo monitor headphones with 40mm speaker drivers that are designed to get the best from digital source material, such as CDs. They're very comfortable with fully adjustable headstrap. They come with gold plated 3.5mm plug and 3.5mm to 6.5mm adaptor. 64 ohms impedance with a frequency response of 20-20,000Hz.
Cat C 4154

$52.95

SONY
HiFi Headphones MDRV250

Get great sound from your home HiFi. Compact design with 23mm drivers and gold plated uni-match plug.
Cat C 4423

$59.95

SONY
Closed HiFi Headphones MDRV300

Keep the sound in and minimise outside interference! With 30mm diameter drivers and a gold plated uni-match plug, frequency response: 16-22,000Hz.
Cat C 4451

$89.95

NEW FOR '99

PHILIPS
Headphones

With volume control and mono/stereo select switch.
Cat C 4261

$29.95

Wireless Headphones

digitor Infrared Mono Headphones

No wires, no tangle! Move freely around your listening area and listen to your TV or other mono audio source without disturbing others. Frequency Response: 20-12,000Hz. S/N Radio: 45dB (4m). Maximum Distance: Approx. 7m.
Cat C 4230

$59.50

digitor Infrared Mono Headphones
Rechargeable

Uses superior transmission technology and features volume and balance controls. Convenient built-in recharging circuitry. Includes NiCad rechargeable batteries. Frequency Response: 20-18,000Hz. S/N Ratio: 58dB. Maximum Distance: Approx. 7m.
Cat C 4232

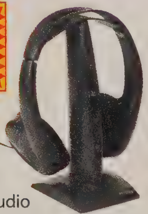
$119.95

NEW FOR '99

PHILIPS
Cordless Headphone SBCHC120
Rechargeable

Lightweight infrared cordless. Ideal for home audio and video systems. 7 metre working range. Rechargeable batteries included. Built-in recharge circuit.
Cat C 4262

$99.95



Earpieces and Accessories

Magnetic Earpiece

3m cable, 3.5mm plug.
Cat C 2760

$8.95

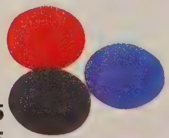
Crystal Earpiece

3.55mm plug
Cat C 2765

$8.95

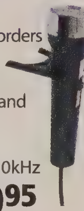
Replacement Ear Pads

13mm	C 4182	$5.95
27mm	C 4184	$6.95



Dynamic Microphones

Cassette Microphone



Can be used with most cassette recorders with a low impedance microphone input. It comes with a 3.5mm plug, 2.5mm plug (for remote switching) and desk stand.

Impedance: 500 ohm

Frequency Response: 100Hz to 10kHz

Sensitivity: -76dB

C 1016

$19.95

Dynamic Microphone

A bargain price for a mic that suits most types of recording! Made from durable plastic, with a 4.5 metre cord fitted with a 6.5mm plug.

Frequency Response: 80-12,000 Hz

Sensitivity: -72 +/- 3dB

Impedance: 600 ohm

C 1506

$44.95

Metal Dynamic Microphone

Quality mic constructed from diecast zinc attached to a 4.5m cord fitted with a 6.5mm phone plug.

Frequency Response: 60-15,000 Hz.

Impedance: 600 ohm

Sensitivity: -75 +/- 3dB

C 1509

$56.50

Professional Quality Microphone

Heavy duty, great sound quality.

Frequency Response: 80-15,000Hz.

Impedance: 500 ohms

Sensitivity: -75 +/- 3dB

Cord: approx. 4.5m

Housing: Die Cast Zinc

C 1511

$89.95

Uni-Directional Mic With 'Anti-Pop' Filter

Tough mic, ideal for bands, PA work or home recording. 3m lead, on/off switch and case.

Impedance: 600 ohms (@1000Hz)

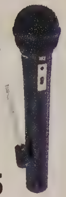
Frequency Range: 80-12,000Hz

Sensitivity: -78dB +/- 3dB

C 1505

$26.95

Wireless/Wired Microphone



Use as a cordless mic tuned into FM radio frequency or as a low impedance mic. Has 3-metre cord and telescopic rod antenna, dynamic insert and uses 2 x AA batteries.

Pattern: Uni-directional

Frequency: 90MHz (variable)

Impedance: 600 ohm

Plug: 6.5mm

C 1583

$59.25

Metal Uni-Directional Dynamic Microphone

Complete with a 4.5m cord, 6.5mm phone plug and a durable case.

Frequency Response: 80-15,000Hz

Sensitivity: -76+/- 3 dB

Impedance: 600 ohm

C 1510

$74.25

Professional Anti-Roll Microphone

A dynamic microphone with professional quality insert. Unique anti-roll surround keeps microphone safe on flat surfaces.

Frequency Response: 80-15,000Hz

Impedance: 500 ohms

Sensitivity: -73 +/- 3dB

Cord: 5m

Housing: Die Cast Zinc

C 1512

$99

Accessories

Microphone Windscreen

Thick, durable foam replacement to cover the business end of your microphone.

C 1265

$8.95

Microphone Holder

Simply clips on to stand. With screw for adjustment, it fits most microphones.

C 1272

$12.95

Mic. Cable

Six-metre microphone cable fitted on one end with a 3-pin XLR plug and a 6.3mm plug on the other.

C1275 $24.95

Balanced Mic. Cable

Strong six-metre microphone cable that is fitted on both ends with 3-pin XLR plugs.

C 1277

$25.95

Microphones

SANYO Dictation Lapel Mic

Cat C 1064

$42.95

SONY Electret Condenser Microphone

Omni-directional desk top microphone. 1m cord, battery powered, ideal for meetings.

Cat C 4453

$49.95

Omni-Directional Condenser Lapel Microphone

digitor
C 1062

This compact, clip-on microphone will come in handy for most types of recordings.

Frequency Response: 50-18,000Hz

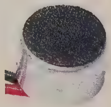
Sensitivity: -65 +/-3dB

Output Impedance: 1K ohm

C 1062

$36.95

Electret Insert With leads



Omni-directional.

Sensitivity: -62 +/- 3 dB

Impedance: <2K ohm

Frequency Range: 50 - 12,500 Hz

C 1163

$5.95

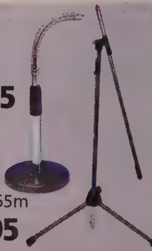
SONY Unidirectional Mic

3m cord, talk switch, vocal.

C 1018

$39.95

Microphone Stands



Microphone Desk Stand

With flexible goose neck.

C 1602

$29.95

Microphone Floor Stand

Extends from 1 to 1.65m

C 1607

$74.95

Digital Cameras

Digital Cameras can be used as a personal and business tool. Not only can you take pictures of your family, save them on your computer and e-mail them, but you can also incorporate digital photos in your Flyers, Greeting Cards and Home Pages etc. Digital Cameras save you money on film and costly film developing.

NEW FOR '99

MX500 Digital Camera 1.5 Mega Pixel

Now you can take high quality images with this Mega Pixel digital camera. It has 1.5 Mega Pixel – 1280x1024 resolution capability which means you can print your pictures using a photo capable printer. It uses compact, removable Smart Media cards for storing your pictures (2mb included in pack). It features a colour LCD display and a 2x digital zoom. A PC link cable is included and you can purchase an optional floppy disk adaptor for even easier file transfer.

Cat G 0967

$1099

NEW FOR '99

HEWLETT PACKARD

Deskjet Printer 710c

Hewlett Packard's brilliant colour printer at the right price. Colour smart II. Up to 6ppm black, 3ppm colour.

HEWLETT PACKARD

PhotoSmart C30 Digital Camera/Printer Bundle

This Mega Pixel camera has a 2x digital zoom capability as well as auto focus and auto flash. It features a 1.8 inch colour LCD screen for viewing every shot before you decide to keep it. It includes a serial PC connection and HP PhotoSmart Photo Finishing software. The Hewlett Packard PhotoSmart camera also includes as standard an AC adaptor, PC and video cables, 4MB CompactFlash card, Microsoft Picture It software and a one year warranty.

Cat G 9101

Includes: HEWLETT PACKARD 710c Deskjet Colour Printer.

$1359

Digital Camera Accessories

Fuji 5 volt AC adaptor	Cat G 0965	$\$69^{95}$
Fuji 2mb Smart Media card Customer Order Only	Cat G 0986	$\$69^{95}$
Fuji 4mb Smart Media card	Cat G 0987	$\$99^{95}$
Fuji 8mb Smart Media card	Cat G 0988	$\$149^{95}$
Fuji 16mb Smart Media card	Cat G 0968	$\$229^{95}$
Fuji Floppy Disk adaptor	Cat G 0985	$\$229^{95}$

SONY

Digital Camera Mavica FD7 10x Zoom

Remove that problem of forgetting to buy camera film and go digital! This camera holds around 25 photos on a standard 3.5" 2HD floppy disc and features 10x optical zoom lens, 2.5" colour LCD screen with brightness control (61000 pixels), sharp 640 x 480 resolution, auto exposure and white balance, 7 step exposure compensation, 1/60 to 1/4000 shutter speed, built-in flash, self timer, fine or standard picture models and four digital picture effects (black and white, sepia, negative art and pastel). Includes rechargeable lithium ion battery and battery recharger.
Cat G 0971

Also available:

Wide Angle Lens VCL-E506*	Cat G 0998	**$129.95**
Tele Photo Lens VCL-E520*	Cat G 0999	**$199.95**
Soft Protective Case	Cat G 0969	**$59.95**

$999

NEW FOR '99

SONY

Mavica FD71 Digital Camera 10x Zoom

The FD71 offers a lighter, slimmer and sleek design as well as new features. Picture quality and efficiency are also improved. It has a quick access 2x High Speed floppy disk drive which can also do a disk copy. A progressive scan CCD provides high quality still images and an auto flash brightens up youro pictures in low light conditions. It also has a 10x zoom optical zoom lens and auto macro capability which enables you to get right up close to your subject. The pack includes a lithium-ion battery which is good for up to 950 consecutive shots from a single charge. That's the equivalent of 50 floppies in the fine mode.
Cat G 0982

Also available:

Soft Protective Case	Cat G 0969	**$59.95**

$1499

NEW FOR '99

SONY

Digital Mavica MVC-FD83 3x Zoom

3.5" floppy disk recording media, 3 x optical zoom, 6 x d igital zoom, auto or manual focus, JPEG picture moed: 1024 x 768 or 640 x 480 picture size, MPEG movie mode, intelligent flash, 2.5" LCD panel, progressive scan CCD system, disk copy function, self timer, info lithium battery system, MGi photo suite software supplied.
Cat G 4101 **Available June 99**

$1699

Also available:

Soft Protective Case	Cat G 0969	**$59.95**

Not available in all stores. Please ring first.

NEW FOR '99

SONY

Digital Mavica MVC-FD91 14x Zoom

Features removable 3.5" 2HD floppy disk storage media. SLR camera-type design. XGA (1024x768 pixel) resolution. Up to 20 shots fine/40 std per disk (VGA JPEG), 8 fine/16 std (XGA JPEG). MPEG Movie mode (up to 60 sec). Progressive scan CCD (850,000 pixels). 14x optical zoom lens (f5.2-72.8). 2.5: colour LCD screen (84,000 pixels). 180k pixel Colour Viewfinder. Auto focus with manual focus ring. Indoor/Outdoor/Set WB. Shutter priority/Iris priority/Twilight AE. Quick replay. Built-in pop-up, auto intelligent flash. Self timer (10 secs). Fine/Standard picture mode. Windows® and Mac™ compatible. MGI PhotoSuite™ SE Bundled.
Cat G 1004

$2499

Not available in all stores. Please ring first.

CITIZEN™

2.2" (55mm) Handheld Colour TV

This handy pocket-sized LCD TV is great to watch when you're out and about! It offers an automatic tuning system, power and select switch, brightness and volume controls, auto tuning, indicator bar and colour control and rod antenna. With external antenna jack, DC in and earphone jacks.
Cat G 5526

$229

Also available:
Optional AC Adaptor
Cat M 9727 **$39.95**

CASIO

LCD TV-770

This LCD TV from Casio has a 2.3" screen, an earphone jack and an optional DC input. It uses 4 x "AA" batteries and you can even plug in an external antenna. Great idea for travelling, sports events or just in the bedroom.
Cat G 5604

$259

Also available:
Optional AC Adaptor
Cat M 9727 **$39.95**

CASIO

TFT Screen Handheld TV

This compact LCD TV has a 2.5" high resolution active matrix screen. It has auto tuning and receives VHF and UHF frequencies on the PAL system. It has an earphone socket, external antenna socket and a DC input socket. It uses 3 x AA alkaline batteries.
Cat G 5527

$369

CASIO
TFT
TFT ACTIVE MATRIX
LCD COLOR TELEVISION EV 510

Also available:
Optional AC Adaptor
Cat M 9727 **$39.95**

4" TFT LCD TV

Wow! Get the latest in LCD TV technology with this terrific portable TV. Features include: Super sharp & extra bright picture, A/V input, Auto search tuning, earphone jack. Battery or DC powered. Pack includes AC adaptor, car adaptor and vehicle mounting bracket.
Cat G 7240

$449

5" B&W AC/DC TV

Great for the Boat or Car! You'll find this portable black and white TV perfect as a spare. Put it in the guest room, car or even the boat! Features include carry handle, earphone and mains power jacks plus a telescopic antenna. Powered by an AC adaptor or a car battery. AC and Car adaptors supplied.
Cat G 7105

$149

5" Colour AC/DC TV

12.5cm Colour Portable TV. Perfect as a second TV, or for the car or boat. With auto tune, AC/DC operable, (AC power & car adaptors supplied). Features include: A/V input, headphone jack, external antenna jack & telescopic antenna.
Cat G 7205

$429

10" AC/DC Colour TV

Great for use in the boat or caravan, this 10" Colour CRT TV features: AC/DC operation, on screen display, sleep timer, 30 programme memories, A/V input & infrared remote control.
Cat G 7230

$549

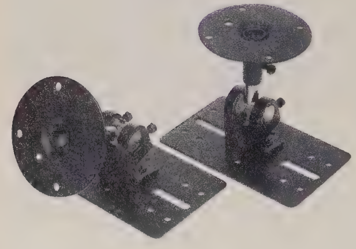
Video Sender

Your own mini transmitter! No need for video cables. Compatible with all VCR and UHF TV sets. Comes complete with power supply and accessories. 'Send' your video to any TV in the house! Watch what you want – and keep the children happy!
Cat G 5561

VIDEO SENDER

$99.95

Brackets



Speaker Brackets

Easily adjustable with horizontal and vertical controls. Holds most speaker sizes up to 30kg each. Satin black finish. Easy to assemble.

Cat G 1504

12 MONTH WARRANTY

$59.95

Stereo & Speakers Brackets

Holds up to midi-sized stereo & 2 speakers, up to 30kg maximum. Satin black finish. Easy to assemble.

Cat G 1502 Limited Stock

12 MONTH WARRANTY

$19.95

TV/Monitor Wall Bracket 14"-18"

Easy to assemble and it's expandable! Great for the home or office. Adjustable to hold 35-45cm (14"-18") TV/monitor up to 30kg.

Cat G 1500

12 MONTH WARRANTY

$79.95

Universal Remote Controls

Forget trying to turn on your TV with the stereo remote control, or fumbling with your TV remote to start your VCR, these all-in-one units manage several appliances!

PHILIPS

Universal Remote

This handy remote control is ideal for replacing lost or broken remotes. You can use it to adjust volume and channel as well as power and mute. It comes complete with batteries.

Cat G 0008

$29.95

Credit Card Universal Remote Control 1-4

Integrates up to four remote controls into one ultra-slim credit card size universal remote. Pre-programmed and easy to use. Can replace lost or broken remotes.

Cat G 1220

$44.95

UNIVERSAL REMOTE

ONE FOR ALL

Universal Remote Control 1-3

Throw away your stack of old remote controls. This preprogrammed unit can replace up to 3 remotes. Now you can access your TV and VCR from one remote control. Stylish and ergonomic design.

Cat G 1271

$54.95

PHILIPS

Remote Control 1-3

This universal remote control from Philips can control up to 3 devices. Control your TV, video or satellite device. It is a quality remote which looks great too. Includes batteries.

Cat G 0009

$64.95

Universal Remote Control

This remote will control up to 6 devices. It has large buttons for operating your video and an LCD screen. It also has a learning function.

Cat G 1212

$109.95

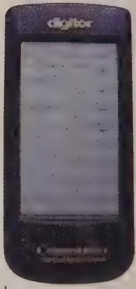
digitor

Commander Universal Remote

Large LCD touch screen controls up to 8 devices, single function panel can easily be operated. This unit can learn the functions of 8 infra-red remote controls. Customise each screen for individual devices. The macro function can control several sets of operations at the same time. Back up power protects input data, surround sound compatible.

Cat G 1210

$179.95



A range of quality Audio and Video connecting cables already fitted with plugs. Cables are 2 metres long unless otherwise stated.

Audio Cables

1 x RCA - 1 x RCA

RCA Plug - RCA Plug 4 x 1m	C 1069	**$14.95**
RCA Plug - RCA Plug 2m	C 1070	**$9.95**
RCA Plug - RCA Plug 5m	C 1071	**$12.95**
RCA Plug - RCA Plug 10m	C 1074	**$14.95**
RCA Plug - RCA Socket 2m	C 1280	**$14.95**
RCA Plug - RCA Socket 5m	C 1072	**$12.95**

2 x RCA - 2 x RCA

2xRCA Plugs - 2xRCA Plugs 340mm	C 1185	**$12.95**
2xRCA Plugs - 2xRCA Plugs 2m	C 1180	**$14.95**
2xRCA Plugs - 2xRCA Plugs 5m	C 1181	**$16.95**
2xRCA Plugs - 2xRCA Plugs 10m	C 1186	**$22.95**
2xRCA Plugs - 2xRCA Sockets 2m	C 1182	**$13.95**
2xRCA Plugs - 2xRCA Sockets 5m	C 1187	**$16.95**
2xRCA Plugs - 2xRCA Sockets 10m	C 1172	**$16.95**
2xRCA Plugs - 2xRCA Piggy Back Sockets 2m	C 1245	**$21.50**

2 x RCA - 1 x RCA (Y-adaptors/cables)

2xRCA Sockets - RCA Plug 250mm	C 1242	**$14.95**
2xRCA Sockets - RCA Plug 1m	C 1243	**$14.95**
2xRCA Plugs - RCA Plug 2m	C 1190	**$16.95**
2xRCA Plugs - RCA Plug 5m	C 1170	**$14.95**
2xRCA Plugs - RCA Plug 10m	C 1171	**$18.95**

3.5mm - RCA

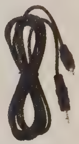
3.5mm Mono Plug - RCA Plug 2m	C 1080	**$9.95**
3.5mm Mono Plug - 2xRCA Plug 2m	C 1250	**$14.95**
3.5mm Stereo Plug - 2xRCA Plugs 2m	C 1240	**$16.95**
3.5mm Stereo Plug - 2xRCA sockets 250mm	C 1252	**$14.95**

6.5mm - RCA

6.5mm Stereo Plug - 2xRCA Sockets 250mm	C 1095	**$12.95**
6.5mm Mono Plug - RCA Plug 2m	C 1107	**$14.95**
6.5mm Stereo Plug - 2xRCA Plugs 2m	C 1101	**$14.95**

3.5mm - 3.5mm

3.5mm Mono Plug - 3.5mm Mono Plug 2m	C 1090	**$12.95**
3.5mm Mono Plug - 3.5mm Mono Socket 2m	C 1150	**$12.95**
3.5mm Stereo Plug -3.5mm Stereo Plug 2m	C 1158	**$12.95**
3.5mm Stereo Plug - 3.5mm Stereo Socket 2m	C 1159	**$15.50**
3.5mm Stereo Plug - 3.5mm Stereo Socket 5m	C 1165	**$22.95**



6.5mm - 6.5mm

6.5mm Mono Plug - 6.5mm Mono Socket 2m	C 1122	**$12.95**
6.5mm Mono Plug - 6.5mm Mono Socket 4m	C 1103	**$16.95**
6.5mm Stereo Plug - 6.5mm Stereo Socket Coil Lead 4m	C 1119	**$16.95**
6.5mm Stereo Plug - 6.5mm Stereo Socket 5m	C 1166	**$22.95**
6.5mm Mono Plug - 6.5mm Mono Right Angle Plug Coil Lead 4m	C 1109	**$14.95**
6.5mm Mono Plug - 6.5mm Mono Plug 2m	C 1121	**$9.95**

DIN

5 Pin DIN - 5 Pin DIN Plug	C 1011	**$14.95**
5 Pin DIN - 2 RCA Plugs 2m	C 1021	**$14.95**
5 Pin DIN Plug - Socket 2m	C 1046	**$14.95**
5Pin DIN - 4 RCA Plugs 2m	C 1040	**$14.95**

Other assorted audio cables

4xRCA Plugs - 4xRCA Plugs 2m	C 1061	**$16.95**
3.5mm Stereo Plug - 2x3.5mm Stereo Socket 1m	C 1161	**$12.95**
3.5mm Plug - Twin Wire 1m	C 1081	**$8.95**

Video Cables

3 x RCA - 3 x RCA (1 x video + 2 x audio)

Video 3xRCA - 3xRCA Plug- 2m	C 1289	**$21.50**
Video 3xRCA - 3xRCA Plug- 5m	C 1423	**$26.95**

1 x RCA - 1 x RCA (75 Ohm)

Video RCA Plug - RCA Plug 2m	C 1288	**$16.95**
Video RCA Plug - RCA Plug 5m	C 1421	**$16.95**
Video RCA Plug - RCA Plug 10m	C 1422	**$22.95**

SCART

Scart - Scart Plug 1.5m	C 1210	**$32.95**
Scart - 6xRCA & 2xBNC/RCA	C 1235	**$32.95**
Scart - SVHS + 2xRCA plugs	C 1236	**$22.50**

SVHS

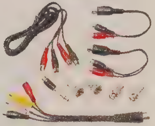
4Pin SVHS - 2xRCA Plugs 1.5m	C 1233	**$14.95**
4Pin SVHS - 4Pin SVHS 1.5m	C 1234	**$16.95**

BNC

BNC Plug - RCA Plug 1.5m	C 1290	**$16.95**
Video BNC - BNC Plug 2m	C 1285	**$19.95**
8Pin - 2xRCA+3.5mm w/BNC	C 1232	**$9.95**

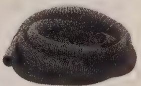
Video Adaptor Pack

Universal Video Adaptor Set	C 1287	**$29.95**



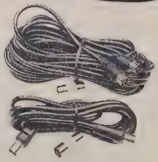
Cable Control

Loom Tube 3m Split Conduit Black	C 0011	**$14.95**



TV (Coaxial)

TV Plug - TV Plug 2m	C 1400	**$12.95**
TV Plug - TV Plug 4m	C 1401	**$16.95**
TV Plug - TV Plug 10m	C 1420	**$20.95**
TV Plug - TV Socket 2m	C 1405	**$12.95**
TV Plug - TV Socket 4m	C 1406	**$16.95**
Video RCA - TV Plug 2m	C 1286	**$16.95**



Harmony Cables

Terrific new range of high quality and ultra high quality audio and video cables. Particular attention has been paid to the quality of the connectors and cable, the soldering process and the shielding. Enhance the quality of your audio and video equipment with **Harmony and Harmony Gold.**

Audio

	Harmony		Harmony Gold	
1 x RC A - 1 x RCA				
RCA Plug - RCA Plug 2m	C 1900	$16.95	C 1920	$22.95
2 x RCA - 1 x RCA (Y-Cable)				
2 x RCA Plugs - 1 x RCA Plug 2m	C 1901	$22.95	C 1921	$32.95
2 x RCA Plugs - 1 x RCA Plug 5m	C 1902	$26.95	C 1922	$36.95
2 x RCA Plugs - 1 x RCA Plug 10m	C 1903	$32.50	C 1923	$39.95
2 x RCA - 2 x RCA				
2 x RCA Plugs - 2 x RCA Plugs 2m	C 1904	$26.95	C 1924	$39.95
2 x RCA Plugs - 2 x RCA Plugs 5m	C 1905	$32.50	C 1925	$42.95
2 x RCA Plugs - 2 x RCA Plugs 10m	C 1906	$36.95	C 1926	$49.95
2 x RCA Plugs - 2 x RCA Sockets 5m	C 1908	$32.50	C 1928	$42.50
2 x RCA Plugs - 2 x RCA Sockets 10m	C 1909	$36.95	C 1929	$52.50
3.5mm - 2 x RCA				
3.5mm Stereo Plug - 2 x RCA Plugs 2m	C 1907	$26.95	C 1927	$39.95

Video

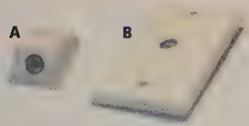
	Harmony		Harmony Gold	
TV (Coaxial)				
TV Plug - TV Socket 2m	C 1940	$22.95	C 1960	$26.95
TV Plug - TV Socket 4m	C 1941	$24.95	C 1961	$29.95
TV Plug - TV Plug 2m	C 1942	$22.95	C 1962	$26.95
TV Plug - TV Plug 4m	C 1943	$24.95	C 1963	$29.95
TV Plug - TV Plug 10m	C 1944	$29.95	C 1964	$39.95
SVHS - SVHS				
4 Pin SVHS - 4 Pin SVHS 2m	C 1950	$22.95	C 1970	$29.95
1 x RCA - 1 x RCA (75 Ohm)				
Video RCA Plug - RCA Plug 2m	C 1945	$16.95	C 1965	$24.95
Video RCA Plug - RCA Plug 5m	C 1946	$22.95	C 1966	$32.95
Video RCA Plug - RCA Plug 10m	C 1947	$27.95	C 1967	$39.95

Audio/Video

	Harmony		Harmony Gold	
3 x RCA - 3 x RCA (1 x Video + 2 x Audio)				
3 x RCA Plugs - 3 x RCA Plugs 2m	C 1948	$34.95	C 1968	$59.95
3 x RCA Plugs - 3 x RCA Plugs 5m	C 1949	$42.50	C 1969	$62.95

Optical Cable

Harmony Optical Cable TO5-TO5 5.0mmx1 metre	C 0061	$59.50
Harmony Optical Cable TO5-3.5 5.0mmx1 metre	C 0062	$59.50
Harmony Optical Cable 3.5-3.5 5.0mmx1 metre	C 0063	$59.50
Harmony Optical Cable TO5-TO5 5.0mmx2 metre	C 0064	$59.95



Wall Sockets – 75 Ohm

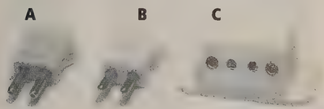
A	Surface Mount Plate with Coax Socket	P 2044	**$5.95**
B	Wall Plate with Coax Socket	P 2042	**$6.45**

Wall Plates

A	Architrave Plate	P 2051	**$3.95**
B	Large Plate	P 2053	**$4.95**

Inserts for Wall Plates

C	75 Ohm Insert for P 2051/3	P 2054	**$3.75**
D	Skt 300 Ohm Insert for P2051/3	P 2056	**$3.75**



300 Ohm Connectors

A	Line Plug Solder/Crimp	P 2082	**$2.95**
B	Line Plug Screw Terminals	P 2084	**$2.95**
C	Surface Mount Wall Socket	P 2081	**$3.45**

75 Ohm Connectors

A	Plug Line Metal Solderless	P 2020	**$2.75**
B	Plug Line Plastic Solderless	P 2021	**$2.25**
C	Plug R/Angle Solderless	P 2024	**$2.80**
D	Socket Line Metal Solderless	P 2030	**$2.75**
E	Socket Line Plastic Solderless	P 2031	**$2.25**
F	Socket Panel, Hole Mount	P 2046	**$2.50**

Coax In-line Joiners

A	Adaptor Female – Female	P 2070	**$3.20**
B	Adaptor Male – Male	P 2072	**$3.20**
C	Cable Joiner Solderless	P 2075	**$3.20**
D	Plug Coax to F Type Socket	P 2036	**$3.50**
E	Plug F Type to 75 Ohm Coax Skt	P 2037	**$4.20**

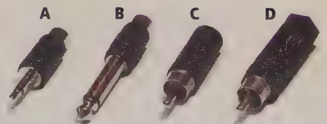
A
B
C
D
E
F
G
H
I
J
K
L
M
N

Audio Adaptors – Phono

A	2.5mm Mono Plug – 3.5mm Stereo Socket	P 6515	**$4.95**
B	3.5mm Mono Plug – 3.5mm Stereo Socket	P 6600	**$4.95**
C	3.5mm Stereo Plug – 3.5mm Stereo Socket R/A	P 6620	**$6.95**
D	3.5mm Mono Plug – 6.5mm Mono Socket	P 6510	**$4.95**
E	3.5mm Mono Plug – 6.5 Stereo Socket	P 6570	**$4.95**
F	3.5mm Stereo Plug – 6.5mm Stereo Socket	P 6505	**$4.95**
G	6.5mm Mono Plug – 3.5mm Mono Socket	P 6520	**$4.95**
H	6.5mm Mono Plug – 3.5mm Stereo Socket	P 6502	**$4.95**
I	6.5mm Stereo Plug – 3.5mm Stereo Socket	P 6500	**$4.95**
J	6.5mm Stereo Plug – 3.5mm Stereo Socket R/A	P 6625	**$6.95**
K	6.5mm Mono Plug – 6.5mm Stereo Socket	P 6580	**$4.95**
L	3.5mm Mono Plug – 2 x 3.5mm Stereo Socket	P 6527	**$4.95**
M	3.5mm Stereo Plug – 2 x 3.5mm Stereo Socket	P 6525	**$6.95**
N	6.5mm Stereo Plug – 2 x 6.5mm Stereo Socket	P 6581	**$9.95**

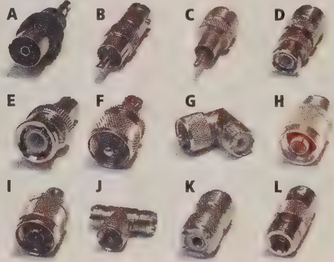
Audio Adaptors – RCA

A	1 x RCA Plug – 1 x RCA Plug	P 6614	**$4.95**
B	1 x RCA Skt – 1 x RCA Skt	P 6565	**$4.95**
C	2 x RCA Skt – 2 x RCA Skt	P 6567	**$9.95**
D	3 x RCA Skt – 3 x RCA Skt	P 6568	**$12.95**
E	1 x RCA Plug – 2 x RCA Skts	P 6610	**$6.95**
F	1 x RCA Plug – 2 x RCA Plug Skt Gold	P 6612	**$9.95**



Audio Adaptors – Phono to RCA

A	3.5mm Mono Plug – RCA Skt	P 6560	**$4.95**
B	6.5mm Mono Plug – RCA Skt	P 6530	**$4.95**
C	RCA Plug – 3.5mm Mono Skt	P 6540	**$4.95**
D	RCA Plug – 6.5mm Mono Skt	P 6550	**$4.95**



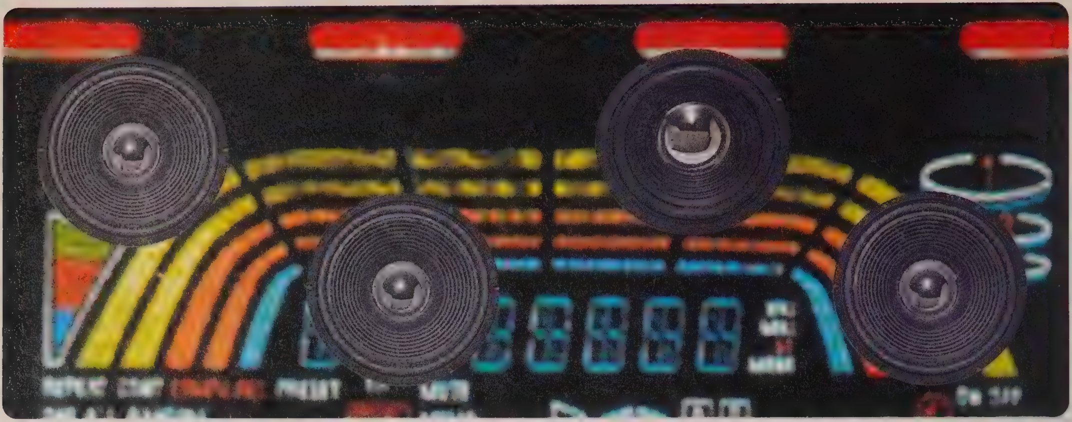
Adaptors – Video/RF

A	3.5mm Mono Plug – 75 Ohm Coax Skt	P 2035	**$3.75**
B	RCA Plug – BNC Socket	P 2255	**$5.95**
C	RCA Plug – UHF SO239 Skt	P 1455	**$4.95**
D	BNC Plug – UHF SO239 Skt	P 2230	**$5.95**
E	BNC Plug – RCA Socket	P 2250	**$5.95**
F	UHF PL259 Pug – BNC Socket	P 2240	**$5.95**
G	UHF PL259 Plug – SO239 Socket R/Angle	P 2382	**$6.95**
H	N Plug – SO239 Socket Silver	P 2415	**$9.95**
I	N Plug – BNC Socket Nickel	P 2417	**$9.95**
J	Adaptor 'T' PL250 Plug – SO239 Socket	P 2384	**$9.95**
K	SO239 Socket – SO239 Socket Joiner	P 2380	**$4.95**
L	N Socket – N Socket Joiner Silver	P 2420	**$6.95**

BNC Joiners

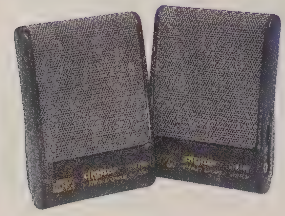
A	50 Ohm Male Terminator	P 2280	**$5.95**
B	Adaptor 'T' Male – 2 x Female	P 2277	**$5.95**
C	Adaptor 'I' Female – Female	P 2265	**$5.95**
D	Adaptor 'T' Female – 2 x Female	P 2275	**$5.95**

For a full listing of Plugs, Sockets and Adaptors, turn to page 204



A Sound Range of Speaker Drivers

Get more from your sound with our speaker drivers. Come into our stores and see our helpful staff for the best advice on which drivers to use. If you're building your own speakers, or just buying replacement drivers, Dick Smith Electronics is the place to go.



Mini Speaker Set

Perfect for your personal stereo or CD player! With maximum input of 0.3 watts and 8 ohms impedance.
Cat C 4159

$34.95

Mini Stereo Amplifier Speakers

The BassBoost switch will give you depth of sound and its separate volume controls mean you can get exactly the balance you want. With LED power-on indicator and AC power adaptor jack. Requires 4 x "AA" batteries.
Cat C 4156

$52.95

Dynamic Stereo Speakers

Simply plug these into the phone jack of your personal CD or cassette player for great sound everyone can hear! They provide 4 watts of power and include a power-on indicator and DC jack. Requires 4 x "C" batteries.
Cat C 4169

$59.95

Amplified Speakers

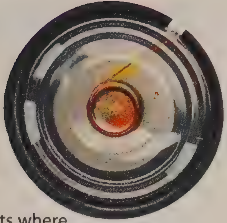
Ideal for your CD player or stereo, these 4W magnetically shielded speakers are also great for computers. Features volume control, bass boost, power on/off and headphone jack. Requires 4 x "C" batteries or a 6V DC adaptor.
Cat C 4080

$69.95

Wireless Speakers

Using advanced infrared technology, these speakers are ideal for stereo TV, hi-fi, multimedia and surround sound! With individual volume controls and range of up to 10m, they're portable and easy to install. Requires 8 x "D" batteries or 2 x 6V 500mA DC adaptors.
Cat C 4233

$159



27mm Mini Speaker

Great for projects where space is precious. With 8 ohms impedance and maximum power output of 0.25W. 8mm deep.
Cat C 2208
$6.95

57mm Mini Speaker

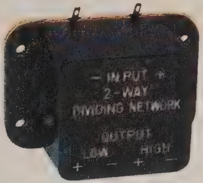
Ideal for small radios and a wide range of kits. Maximum Power: 0.25W.8ohm impedance.
Cat C 2222
$7.95

Pillow Speaker

A 16 ohm pillow speaker in a modern, rounded design, it comes complete with cord and 3.5mm mono plug.
Cat C 2223
$16.95

Speaker Level Control

Ideal for PA systems or extension speakers. Standard L-pad design maintains 8 ohm impedance.
Cat C 7204
$19.95



2-Way Crossover

With respectable crossover characteristics, the frequency is approximately 5kHz and the impedance is 8 ohms. Roll Off: 6dB/octave. System Power: 60W max.
Cat C 2512
$24.95

– INPUT +
3-WAY
DIVIDING NETWORK
OUTPUT
LOW MID HIGH
+ – + – + –

3-Way Crossover

It's a 2-inductor network with non-polarised capacitors giving frequencies of 1.8kHz and 8.1kHz. Roll Off: 6dB/octave. System Power: 80W max.
Cat C 2513
$34.95

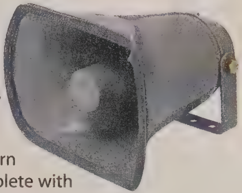
DICK SMITH
Black Speaker Grille Cloth

Speaker Grille Cloth

Are your speaker enclosures looking a little shabby? This quality speaker grille cloth is easy to fit and can have those old boxes looking like new. In pack 1m x 1.5m.
Cat C 2095
$22.95

Horn Speaker

Ideal for boating, this is a waterproof horn speaker at an incredibly low price! The speaker's impedance is 8 ohms and it has a 10 watt capacity.
Cat C 2705
$29.95



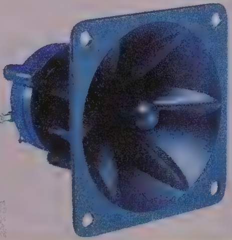
15 Watt Horn Speaker

Weatherproof, quality 125 x 165mm aluminium horn speaker. Complete with metal mounting bracket. Suitable for all outdoor and indoor PA systems. The speaker impedance is 8 ohms and the frequency response 350Hz to 5,000Hz. Maximum power handling is 15 watts RMS.
Cat C 2706
$64.95

A series of special-purpose sound reinforcement speakers and horns from the famous Motorola company. These are very "bullet-proof" units, yet they offer very low distortion, high sensitivity and excellent transient response.

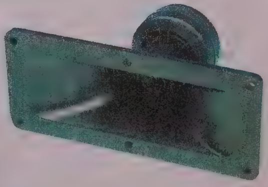
KSN 1005 Superhorn

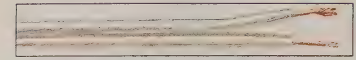
Frequency Response:
4kHz to 27kHz
Average Sensitivity:
90dB @ 1m/2.83V
Maximum Power Handling:
75W (8 Ohm system reference)
Cat C 2205
$24.50



KSN 1141 Horn Speaker

Frequency Response:
1.8kHz – 30kHz
Average Sensitivity:
92cB @ 1m/283V
Maximum Power Handling:
400W
Cat C 2200
$49.95





OFC Speaker Cable

Conductors: 60 x 0.12mm
Cross Sectional Area: 0.66mm^2
Insulation: PVC
Nom. Cap: 50pF/m
Cat W 2013

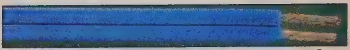
$1.95m

OFC LOUD SPEAKER CABLE

Low Loss OFC

Conductors: 168 x 0.12mm
Cross Sectional Area: 1.9mm^2
Nom. Cap: 60pF/m
Cat W 2016

$3.45m



Harmony High Performance Flat OFC Speaker Cable

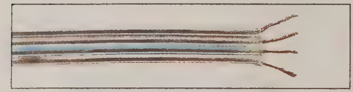
Insulation: PVC
Nom. Cap: 40pF/m

16 Braid
Conductors: 112 x 0.10mm
Cross Sectional Area: 0.88mm^2
Cat W 2000

$2.50m

24 Braid
Conductors: 168 x 0.10mm
Cross Sectional Area: 1.3mm^2
Cat W 2001

$3.50m



Dual Fig. 8 OFC Cable

Conductors: 60 x 0.12mm
Cross Sectional Area: 0.66mm^2
Insulation: PVC
Nom. Cap: 50pF/m
Cat W 2023

$2.75m

Super Low Loss OFC

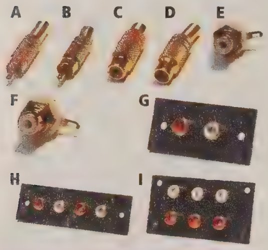
Conductors: 315 x 0.12mm
Cross Sectional Area: 3.5mm^2
Insulation: PVC
Nom. Cap: 60pF/m
Cat W 2017

$4.95m

Gold Monster Twist Connectors

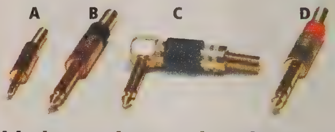
The perfect termination for speaker cable. No soldering required, they simply screw on.
Cat P 9250

$11.95pair



RCA Gold Series Connectors

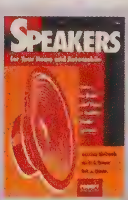
A	Plug RCA Metal Red Gold Series	P 1425	**$2.95**
B	Plug RCA Metal Black Gold Series	P 1427	**$2.95**
C	Skt RCA Line Red Gold Series	P 1411	**$2.95**
D	Skt RCA Line Black Gold Series	P 1413	**$2.95**
E	Skt RCA Bulkhead Mount Red Gold	P 1431	**$5.95**
F	Skt RCA Bulkhead Mount Black Gold	P 1432	**$5.95**
G	Socket 2-Way Gold 22 x 56mm	P 1450	**$4.95**
H	Socket 4-Way Gold 24.4 x 76mm	P 1453	**$5.95**
I	Socket 6-Way Gold 50 x 48mm	P 1454	**$6.95**



Gold Phono Plugs and Sockets

A	Plug 3.5mm STEREO GOLD Phono	P 1147	**$3.75**
B	Plug 6.5mm Mono GOLD Phono	P 1163	**$3.95**
C	Plug 6.5mm R/A MONO GOLD Solid	P 1164	**$5.95**
D	Plug 6.5mm STEREO GOLD Series	P 1167	**$3.95**

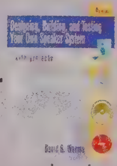
Speakers for your Home & Automobile



A comprehensive coverage that shows how to select and build speaker systems for the home and automobile.
Cat B 1259

$34.95

Designing, Building & Testing your own Speaker System 4th Edition



Projects and step-by-step instructions on choosing the right speakers, set up a home system, building speakers and how to evaluate speakers by ear.
Cat B 1264

$49.95

The Car Stereo Cookbook

The Car Stereo Cookbook

Written by a master of audio electronics, The Car Stereo Cookbook shows you how to plan your design, choose your components, install them optimally – and save a lot of money!
Cat B 1269

$59.95

The Master Handbook of Acoustics, 3rd Edition

THE MASTER HANDBOOK OF ACOUSTICS

Covers the science of acoustics and acoustical techniques with new chapters on digital and analogue sound processing, computer aided room design, and synthesiser/midi studio acoustics.
Cat B 1749

$59.95

Adaptor Multi-Voltage 800mA

1.5, 3, 4.5, 6V @ 500mA. 7.5, 9, 12V @ 800mA. Simply plugs into a car cigarette lighter socket and allows you to switch voltages to run a large range of battery-powered devices. Has selectable polarity and is supplied with an assortment of plugs.
Cat M 9683

$29.95

Adaptor Multi-Voltage 1500mA

Converts car voltage 1.5, 3, 4.5, 6, 7.5, 9, 12V @ 1.5A Auto. Simply plugs in to the car cigarette lighter and allows you to switch voltage. Also allows you to change the angle of the device for better convenience.
Cat M 9682

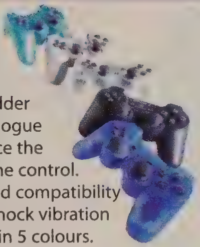
$39.95

Regulated 3-4, 5-6-7, 5-9-12V DC @ 500mA

DICK SMITH ELECTRONICS

Regulated adaptor designed for use with voltage sensitive equipment that needs the voltage to remain constant, even at maximum load.
Cat M 9727

$39.95



Dual Shock Controllers

Feel every jolt, shudder and thud. Twin analogue control sticks – twice the precision, double the control. Provides guaranteed compatibility with built-in dual shock vibration function. Available in 5 colours.

Cat Y 9644/5/6/7 Cat Y 9577

$59.95ea

Coloured Controllers

Sony built quality and design for digital precision response every time.

Cat Y 9534/2

$34.95ea

G-Con 45

Namco's light gun provides superiority in delivering ultimate arcade experience to the home. Signal-scanning plug sets new industry standard for accuracy.

Cat Y 9700

$69.95

Memory Cards

The official memory card is an essential accessory for all games. This only official "data storage unit" now in 8 different colours.

Cat Y 9576

$34.95ea

Playstation Console

Plugs straight into your TV. (Older TVs may require an adaptor – see RFU adaptor).

Cat Y 9530

$229

Mad Catz Steering Wheel

Cat Y 9561

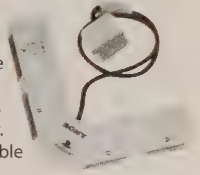
$149

RFU Adaptor

Allows Playstation to be connected to your old TV (TVs with no video inputs).

Cat Y 9243

$49.95

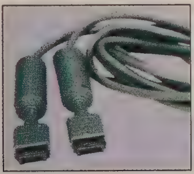


Multi Tap

Great for team games. Plugs in the controller port allowing four plays to plug in and play. Eight players possible with 2 multi taps.

Cat Y 9281

$49.95

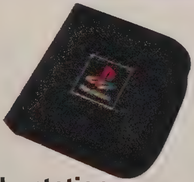


Link Cable

Connects 2 Playstations and 2 TVs for simultaneous gaming.

Cat Y 9280

$59.95



Playstation CD Case

Cat Y 9311

$34.95

Playstation Console Case

Cat Y 9650

$49.95

Playstation Console Case Bag Bundle

Cat Y 9246

$79.95

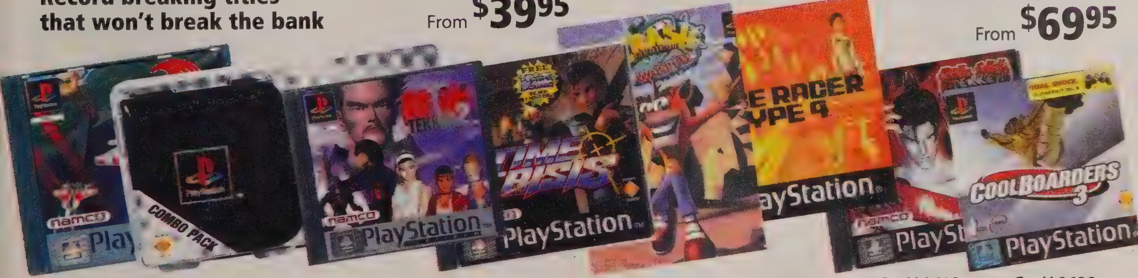
Platinum – Only the best go Platinum!

Record breaking titles that won't break the bank

From **$39.95**

Premium Titles

From **$69.95**



Cat Y 9212
Cat Y 9634
Cat Y 9287
Cat Y 9633
Cat Y 9639
Cat Y 9681
Cat Y 9613
Cat Y 9638

Nintendo GAME BOY

Gameboy Pocket

Cat Y 7611

$84.95

Gameboy Link Cable

Cat Y 7193

$19.95

Pokemon Pikachu

Your very own Pikachu pal will accompany you everywhere. Look after him!

Cat Y 7196

$59.95

Gameboy Pocket Printer

Cat Y 7617

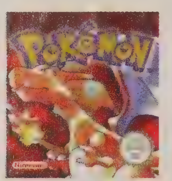
$129.95

Gameboy Colour

The next generation Gameboy is faster, sharper and full colour.

Cat Y 7601

$169.95



Pokemon

Find, capture and train your own Pokemon monsters.

Cat Y 7199 $59.95

Pokemon Red

Cat Y 7198 $59.95

Quest of Camelot Full Colour

Cat Y 7354 $59.95

Bugs Crazy Castles Full Colour

Cat Y 7398 $59.95

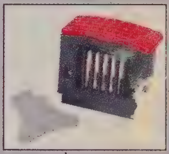
Shadowgate Classic Full Colour

Cat Y 7397 $59.95

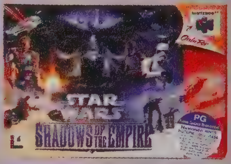
NINTENDO64

Memory Expansion Pack

Cat Y 6407



$69.95



A Great Range of Titles available instore

Rumble Pack

See how it feels to feel what you see. Instantly transmitted to your N64 controller.

Cat Y 6408

$29.95

Memory Cartridge

Now you can save game statistics and data.

Cat Y 6409

$39.95

Nintendo RF Switch

For connecting the Nintendo 64 to a TV without Audio/Video connections.

Cat Y 6410

$49.95

Nintendo Hand Control

Reach new levels of accuracy and Play-Control with the 14 buttoned and analogue control stick. Black, Blue, green.

Cat Y 6403/05/06 $59.95ea

Little Genius

An electronic learning aid which suits children 4 years and up. Has 20 educational games and learning activities. It is portable and easy to use and has the QWERTY keyboard.
Cat Y 7271

$\$89^{95}$

JC Junior Computer Plus Learning Aid

With large LCD graphics, 26 multi level multi player activities, playful sound effects, raised QWERTY keyboard, 3 skill levels, 1 or 2 player mode and a lap top style.
Cat Y 7299

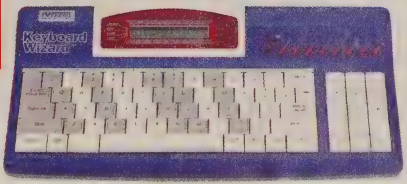
$\$99^{95}$

Junior Comquest Plus Electronic Learning Aid

26 built-in multi-level games, 3 skill levels, 2 player mode, QWERTY keyboard, a built-in mouse and volume/contrast control. Introduces computer learning, develops reading and number skills. This learning aid suits children 6 years and up. Uses 4 x "AA" batteries (not included).
Cat Y 7297

$129

NEW FOR '99



Keyboard Wizard

A typing tutor. Learn to type and understand the keyboard before moving on to a computer. Easy-to-read, 10 character LED screen. Includes a typing lesson course book. Features many built-in typing activities. Uses 4 x "AA" batteries (not included).
Cat Y 7078

$139

Comquest PC

Great as an introduction to computers for children aged 7 years and over. With full-stroke QWERTY keyboard, sleek laptop design and dot-matrix LCD display. 22 multi-level games and activities. Volume and contrast controls. Uses 4 x "C" batteries (not included).
Cat Y 7285

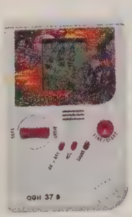
$179

Hand-Held Card Boy Game

CARD BOY
KT-032

Pocket sized LCD gaming fun. Requires 1 x A76 battery.
Cat Y 7798

$\$9^{95}$



Hand-Held Games

Choose from a range of single twin-screen games at low prices!
Game Child Cat Y 7797

$\$14^{95}$

POKER
BLACKJACK

Casino Type Handheld Games

Realistic casino type action games with automatic scoring. Ideal for travel. 2 great games: Poker or Blackjack. Uses A76 or equivalent battery (S3061).

Poker Cat Y 2829
Blackjack Cat Y 7830

$\$14^{95}$

digitor

FM Walkie Talkies

Has long 200m range, operates on a 27MHz band and FM transmission. No licence required and comes complete with carry strap and telescopic antenna for easy storage. Requires 9V battery per unit.
Cat D 1090

$\$69^{95}$pr

NOVAG®

'Amethyst' Computerised Chess Set

Fully portable, popular peg style sensor. Easy to read LCD screen. Uses 4 x "AAA" batteries (not included).
Cat Y 7091

$\$79^{95}$

NOVAG®

'Aquamarine' Computerised Chess Set

This set has 16 levels of play suitable for beginners to budding grand masters. Uses 6 x "AA" batteries (not included).
Cat Y 7089

$\$94^{95}$

Funlights

The mouth opens to shine light. Requires 2 x AA batteries.
Cat Y 2149

$9.75ea

Musical Twist 'N' Sound Toy

Twist the colourful panels to match and hear the sound or tune. Animal sounds or nursery rhymes (batteries needed).
Cat Y 7019

$9.95ea

Fantastic Puppy

Barks and somersaults! Great fun for kids. Uses 2 x AA batteries (not included).
Cat Y 2522

$14.95ea

Musical Play Mat

Great fun for toddlers! Make animal sounds by crawling, walking or dancing! With 4 animal sounds, 8 programmed songs and wipe clean vinyl. Uses 3 x AA batteries (not included).
Cat Y 7015

$19.95

Deluxe Koolshades Electronic Keyboard

Fantastic quality and sound, electronic keyboard. Featuring 3 octaves, 8 rhythm patterns, 8 orchestrations, 4 percussion, cymbals, bass, snare, high hat and 4 animal sounds. Uses 4 x AA batteries (not included).
Cat Y 6927

$29.95

Kids Musical Guitar

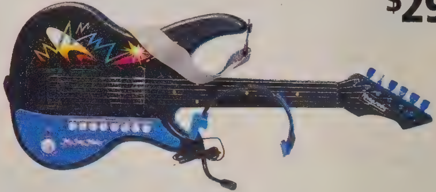
With 13 electronic keys, 3 programmable rhythms and a pre-programmed melody! Includes hands-free play headset, sing-a-long microphone and shoulder strap. Uses 4 x AA batteries (not included).
Cat Y 7025

$24.95

Electronic Keyboard with Sing-a-long Microphone

This keyboard has eight programmable rhythms, four percussion sound pads, four electronic animal sounds, six pre-recorded demo tunes and two-note polyphonic play. Comes with sing-a-long microphone! Uses 4 x AA batteries (not included).
Cat Y 6928

$34.95



Electronic Tuneable Guitar

Sounds just like a real guitar! This full-sized electronic guitar is designed especially for kids, with carry strap and microphone. Colour and decals may vary from store to store. Uses 4 x C batteries (not included).
Cat Y 7007

$59.95

NEW FOR '99

Grand Piano with Magic Light

Follow the magic light keys to play tunes. Features sing-a-long microphone and 32-key flashing keyboard. Uses 4 x AA batteries (not included).
Cat Y 7045

$64.95

"Slammer Jammer" Guitar

15 guitar solo demos, 15 built-in rhythms, 4 built-in guitar effects, 14-step tempo, swing bar effect and more. Uses 4 x AA batteries (not included).
Cat Y 7023

$39.95

NEW FOR '99

Rock 'n' Roll Stage Show for Kids!

Includes guitar with electronic speaker box, shoulder strap, microphone and adjustable stand. Colour and decals may vary from store to store. Uses 4 x C batteries (not included).
Cat Y 7006

$69.95

Quartz Travel Clock

QUARTZ
11:22

Compact, but with large, easy to read digital display. Use the handy fold-out stand, or mount on the dashboard of your car with the velcro tape supplied. Complete with battery.

Cat Y 1009

$\$12^{95}$

Digit Clock with Backlight

12:38
BACKLITE

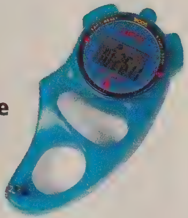
Electronic clock with green light, calendar, jumbo LCD display, time and calendar readout, strong green LED read. Ideal for the car, kitchen, bedroom, reading room. Uses A761 (S-3061) batteries (included).

Cat Y 1205

$\$9^{95}$

NEW FOR '99

Ergonomic Style Stopwatch



Comes in assorted colours with daily alarm and hourly chime. 1/100 second readout. 12/24 hour clock function and requires a lithium battery (included).

$\$22^{95}$

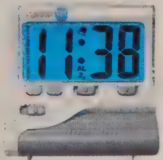
Cat Y 1276

Economy Quartz Stopwatch

With easy-to-read LCD display, split/lap times, regular watch function and calendar. Comes with handy nylon lanyard.

Cat Y 1051

$\$16^{95}$



Backlight Super Glow Clock

Big, easy-on-the-eyes backlit LCD screen, quartz accuracy, PM and ALARM ON indicators, selectable display for 12 or 24 hour international time. Requires 2 x AA batteries.

$\$22^{95}$

Cat Y 2242

Digital Alarm Clock

A compact, space-saving LED alarm clock with battery back-up, snooze function and power failure indicator.

Cat Y 1024

$\$16^{95}$

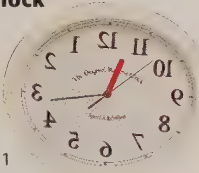
Large Display Travel Clock

Large digital LED readout features handy backlight, choice of 12 or 24-hour clock format, and 1-minute loud alarm. Uses 1 x AAA battery.

Cat Y 2240

$\$19^{95}$

Backward Clock



It's different! Bemuse and baffle friends, family or colleagues with this unusual timepiece. Uses 1 x AA battery (not included).

Cat Y 2198

$\$24^{95}$

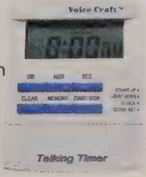
High Quality Digital Stopwatch

With 24-hour stopwatch function, 1/100 second readout and split/lap time, this rugged stopwatch is water resistant and comes with nylon lanyard.

Cat Y 1050

$\$29^{95}$

Talking Count-Down Timer

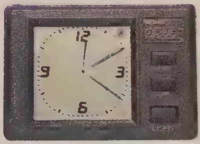


A voice tells you how much time is left during count down. 3-in-1 functions. Count down timer, count up timer plus a talking clock with different alarm sounds. Desktop stand or belt clip. Uses CR2032 (S-3331) lithium battery (included).

Cat Y 5187

$\$23^{50}$

LCD "Analogue" Alarm Clock

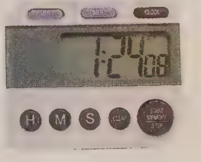


LCD screen designed to resemble a clock with hands. Includes handy night light, folding stand, battery and velcro tape for dashboard mounting.

Cat Y 1043

$\$19^{95}$

Dual Digital Timer

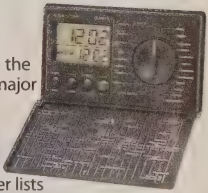


This large display timer counts down or up. Programmable to 99 hours, 59 minutes and 59 seconds, with 1-minute alarm. Includes timer memory recall and folding stand.

Cat Y 5188

$\$22^{95}$

World Time Travel Clock



Programmed with the time zones of 20 major cities, it features 12/24-hour clock mode, 4 minute snooze function, flip out stand, cover lists time difference between featured cities. Uses G13 1.5V button cell battery (S-3293).

Cat Y 1040

$\$29^{95}$

10 Lap Memory Stopwatch

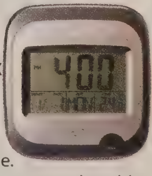
Features 10 lap memory, 24 hour stopwatch function, 1/100 second readout and split/lap time. It is water resistant and comes with nylon lanyard.

Cat Y 1290

$\$36^{95}$

NEW FOR '99

Large Digital Wall Clock



Jumbo digital display with time, month, day, date and thermometer, 12 or 24 hour clock mode. Celsius/Fahrenheit temperature selectable modes. Requires 2 x "AAA" batteries (not included).

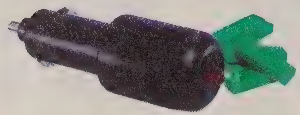
Cat Y 2199

$\$89^{95}$

Echo Whistle Keyfinder Keyring

You'll never lose your keys again! With a keyfinder keyring, your keys are only ever a whistle away.
Cat Y 1070

$4.95

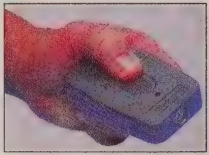


Deodoriser Car Light Dispenser

Operating off most car cigarette lighters, this handy unit eliminates odour and mustiness while your car engine is running. Includes 6 replacement cartridges. Disposable.
Cat Y 9040

$8.95

Ultrasonic Dog Trainer/ Chaser



Ideal for training your dog, or deterring dangerous dogs, this trainer/chaser emits a high-frequency sound (20 000 to 25 000 Hz) at a level of 110 to 115 Dbs. Push button operated with an effective range of 6m. Uses a 9V battery (not included).
Cat Y 2310

$24.95

3-in-1 Bike Computer

Water resistant with LCD and 24 hour alarm clock. Displays current speed, maximum speed, average speed, trip distance, trip time, total distance and auto start. Uses CR2032 lithium battery (not included).
Cat Y 4116

$36.95

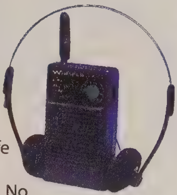
NEW FOR '99

Personal Mini Fan with Lanyard

Keep cool anywhere, anytime with this handy personal mini-fan. Featuring a convenient lanyard, the fan uses 2 x AA batteries (not included).
Cat Y 8518

$6.95

Whisper 2000 Personal Sound Amplifier



This amazing, budget-friendly personal sound amplifier will make life far more pleasant for the hearing impaired. No more having to turn up the TV to extreme volumes or missing out on crucial speech and sound.
Cat Y 2000

$19.95

Speak E-Z Motorbike 2 Way Communication

For uninterrupted 2-way communication between motorbike partner riders. With hands-free operation and volume control. Easy to connect. Fits all helmets easily. Uses 4 x AA batteries (not included).
Cat Y 2306

$29.95

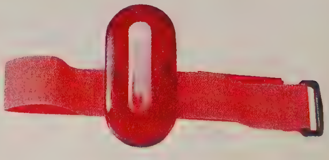
NEW FOR '99

Ultrasonic Pest Control

PestControl
ELECTRO-MAGNETIC
Magneto-Sonic
ULTRA-SONIC

The environmentally safe way to get rid of pests. Ideal for use against cockroaches, mice and other rodents. Simply plug into a wall socket and let the ultrasonic and electromagnetic waves rid those unwanted pests.
Cat Y2312

$89.95

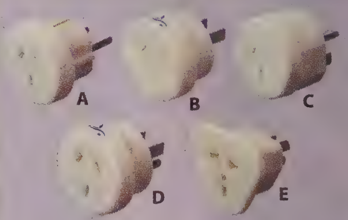


Safety Flasher Light

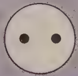
Ideal for bike riders, joggers. Complete with Velcro strap.
Cat Y 1061

$7.95

Travel Adaptors



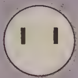
A. New Zealand to Europe



Converts New Zealand mains plug to fit European style. Also Bali, Noumea, Tahiti, parts of Middle East, Asia and South America. Does not convert voltage.
Cat M 7314

$12.95

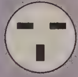
B. New Zealand to Japan



Converts New Zealand mains plugs to suit Japanese, Mexico, Taiwan and parts of South America. Does not convert voltage.
Cat M 7315

$12.95

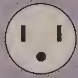
C. New Zealand to UK



Converts New Zealand mains plug to fit UK, Ireland, Singapore, Hong Kong, parts of the Middle East and Africa. Does not convert voltage.
Cat M 7312

$14.95

D. New Zealand to USA



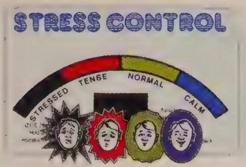
Converts New Zealand mains plug to suit USA and Canadian style plugs. Does not convert voltage.
Cat M 7316

$14.95

E. Multi Reverse Adaptor

Converts USA, Japan, Europe, Great Britain and many other mains plus to the New Zealand system. Earthed for safety. Does not convert voltage.
Cat M 7302

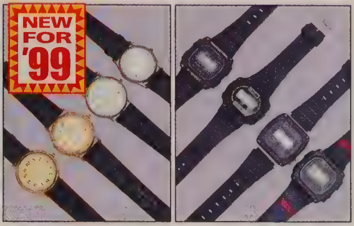
$14.95



Stress Control Card

Novelty mood indicator. Simply hold your thumb on the indicated space and watch the colours reveal your mood. Item not intended as a medical product.
Cat Y 4106

$2.95



New Range of Watches

Everybody should have one!
Cat Y 1279 Y 1285

From **$6.95** to **$12.95**

Thermometer Hygrometer Clock

This thermometer-hygrometer-clock is ideal for greenhouses, offices or homes. It reads indoor-outdoor temperatures and humidity. Its compact, slim design incorporates 12 hour/24 hour time clock, min-max temperature and relative humidity memory, outdoor sensor with 3-metre weatherproof sensor wire. Uses 1 x AAA alkaline battery (included).
Cat Y 5189

$59.95

Razor, Nose & Ear Hair Trimmer Set

Includes cleaning brush and blade cover. Uses 1 x "AA" battery (not included).
Cat Y 9112

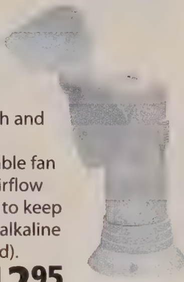
$12.95

NOSE & EARS TRIMMER

Battery Operated Portable Fan

With an on/off switch and suction cup for easy mounting, this portable fan provides powerful airflow and quiet operation to keep you cool. Uses 1 x D alkaline battery (Not included).
Cat Y 8519

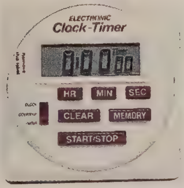
$12.95



Plant Mate Hygrometer

The perfect companion for your pot plants. Simply insert in soil down to root level. Stops singing at night or whenever you press the probes together.
Cat Y 2910

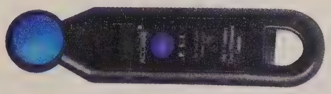
$16.95



Compact Timer/Clock

Great for timing cooking, phone calls, medication schedules etc, this compact 24-hour timer counts up and down and includes a full function digital clock.
Cat Y 1023

$22.95



Digital Tyre Pressure Gauge

Fast, efficient and highly accurate! Simply place the gauge over the tyre valve stem and push the button. Gives PSI reading in large, easy-to-read display. Includes lithium battery.
Cat Y 5034

$29.95

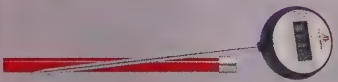
Wireless Door Chime

The bell (receiver) unit can be fixed to a wall, clipped to a belt, or put on a shelf. Colour may vary from store to store.
Cat Y 8405

$29.95

Wired Ding-Dong Door Chime Cat Y 8400	**$16.95**
Wired 12 Melody Chime Cat Y 8402	**$19.95**

Thermometers



Digital Electronic Stem Thermometer

Laboratory-standard thermometer features moveable head switch and LCD display giving 3-second updates. With a measurement range of -50C to 150C (-58F to 302F) and more than 5000 hours of battery life.
Cat Y 5031

$22.95

NEW FOR '99
BLUE
12:38
LITE

Clock with Indoor/Outdoor Thermometer

This electronic indoor/outdoor thermometer has a blue-glow backlight for night viewing, easy-to-read jumbo digital display, precision quartz accuracy. Uses (S 3061) A76 or L44 size batteries (included).
Cat Y 5037

$28.50

Slimline Thermometer

Monitor the temperature in two places at once! Great for indoor/outdoor temperature readings or for keeping an eye on the baby's room. Compact, with large, easy-to-read LCD. Complete with battery.
Cat Y 5007

$32.95

NEW FOR '99

12 Volt DC Mini Fan

Ideal for cars, boats, trucks or caravans, this 2-volt oscillating fan has a strong suction cup for easy installation.

Cat Y 8524

$12.95

NEW FOR '99

Hair Clipper Set

Great for low cost home hair cuts, this set includes 4 trimmer guides, a cleaning brush, a 7-inch barber comb and blade protective cap. Plugs into power point.

Cat Y 9038

$34.95

Electronic Kitchen Scales

Its slimline design will save you space in the kitchen, while its auto-power off function will save battery power. These handy kitchen scales reset to 0 to give individual weight readings of each item added and convert between kilos and pounds. Comes with a 3-month warranty and uses 4 x AA batteries (not included).

Cat Y 5021

$64.95

ARLEC

Kitchen Scales

These handy kitchen scales display in grams, pounds and ounces. Includes a detachable bowl that doubles as a mixing bowl, easy to read digital display and a weighing capacity of 5kgs.

Cat Y 4133

$79.95

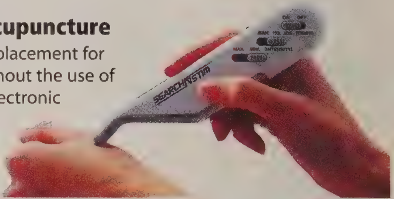
Thinner Bathroom Scales

HIghly accurate (uses a strain gauge instead of springs) electronic scales that are only 25mm thick! With auto zero set and large, easy-to-read LCD display, they read to 0.5kg. Comes complete with lithium batteries and a full one-year warranty.

Cat Y 5027

$99.95

Electronic Acupuncture



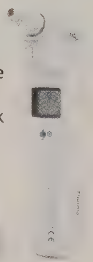
A safe, hi-tech replacement for acupuncture without the use of needles. Using electronic signals, this remarkable device both searches for and stimulates acupuncture points. Compact, light-weight and easy to operate, this unit features useful sound and light indicators and is powered by two lithium batteries (included).

Cat Y 5073

$79.95

BRAUN

ThermoScan Thermometer



Simple, fast and painless for parents and children. Takes the temperature in 1 second. It's accurate – the eardrum shares the same blood supply with the body's temperature control centre. And it's safe – risk of cross-contamination is virtually eliminated. 9V alkaline battery required.

Cat Y 9115

$99.95

NEW FOR '99

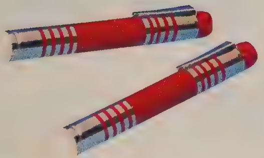
Omron Massager TensPulse HVF122

Special stimulation programs for shoulders and back. Pushing, tapping, kneading stimulation. "Soft" mode provides gentle stimulation. Select the desired program with one-touch operation. Large easy to apply pads. Automatic shut-off function (15 minutes). Requires 2 x AAA batteries.

Cat Y 5094

$139.95

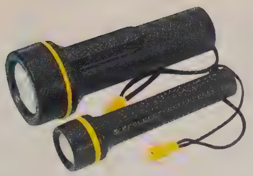
Lens Filters Cat Y 9116 **$9.95 ea**



Penlight Torch

Just slip it in your pocket.
Cat Y 1127

$2.95



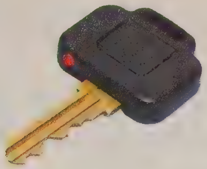
Rubber Torches

Great for the outdoors! Uses 2 x "AA" batteries.
Cat Y 2139

$4.95 ea

Large size uses 2 x "D" batteries.
Cat Y 2137

$5.50 ea



Keylight

With this handy keyring light, you'll have no trouble finding keyholes in the dark!
Cat Y 1059

$6.95

ARLEC

Torch Penlight

Compact pocket torch with a push button switch.
Cat Y 4131

$9.95

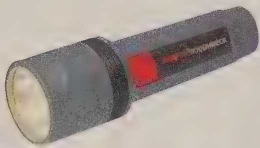
NEW FOR '99

ARLEC

True Blue Torch KKT2C

Weather, shock and corrosion resistant. Non-slip grip. Super krypton globe for extra brightness. 2 x C batteries supplied.
Cat Y 4134

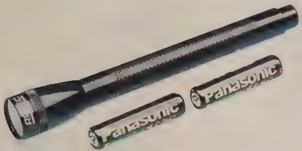
$12.95



Roughneck 2 x "D" Torch

Industrial-strength and water-resistant. With a bright krypton globe.
Cat Y 1129

$16.95



ARLEC

Compact Pocket Flashlight

It's tiny, yet it throws a strong beam of light. 2 x "AA" batteries included.
Cat Y 1110

$16.95

Roughneck "AA" Torch

Up to 80 times brighter than ordinary penlights! With adjustable beam, it has both narrow spotlight and wide angle floodlight.
Cat Y 1124

$16.95

Heavy Duty Tough Flashlight

A solid and professional quality flashlight for tradesmen, security, campers or anyone who needs a dependable torch.
Cat Y 1091

$24.95

ARLEC

Rechargeable Smart Lite

Enjoy the versatility of this rechargeable torch. Ideal for all jobs.
Cat Y 1139

$29.95 ea

ARLEC

Tuff Lantern Torch TT2

Floating water-resistant and shock-resistant torch ideal for many recreational uses. Includes an adjustable stand for hands-free use and super krypton globe for extra brightness. Battery included.
Cat Y 4129

$29.95

NEW FOR '99

ARLEC

Rechargeable Swivel Torch RT900

Rechargeable from household power point (240V) or the cigarette lighter socket in your car.
Cat Y 4135

$44.95

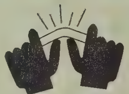
GLOBES, Globes & MORE GLOBES

We stock a range of quality globes at competitive prices. In Bayonet and Edison screw styles. An assortment of different sizes and styles such as general household, daylight reflectors, dichronic globes, pilots (fridge and oven), fancy rounds… and many more…

Emergency Lightsticks

Instant safe lights! Perfect for camping, boating, black-outs, wherever illumination is needed. Safe and non-toxic, wind/water proof, they're non-flammable and provide 12 hours of light each. 4-year storage life. In packs of 2.
Cat S 4020

$12.95pk



BEND ONCE "SNAP"& SHAKE

NEW FOR '99

LED 120 Colour Light Set

This is a high-tech light set using LED's instead of bulbs. It has an 8 mode flasher and uses a safe low voltage.
Cat S 4550

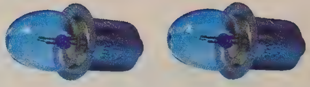
$39.95

New to the Dick Smith 1999 Catalog is this range of high quality Flexilight. They are available in single colour chasing as well as Bi-Chameleon twin colour sets. They come in 9 metre packs and include a power transformer as well as a speed controller. Whilst the transformer and speed controller must be installed indoors, the lighting itself is UV protected and can be used outdoors. Creativity is endless and these are a great idea for business, special events or your home at Christmas.

NEW FOR '99

Flexilight

Flexilight Chasing Light Clear	Cat S 4501	$199
Flexilight Chasing Light Red	Cat S 4502	$199
Flexilight Chasing Light Green	Cat S 4503	$199
Flexilight Chasing Light Blue	Cat S 4504	$199
Flexilight Bi-Chameleon Red/Green	Cat S 4510	$199
Flexilight Bi-Chameleon Yellow/Blue	Cat S 4512	$199



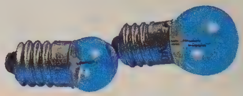
EVEREADY.

Heavy-Duty Torch Globes

Standard flange fit heavy duty torch globes.

2.4 Volt @ 0.5A	Cat S 3967
3.6 Volt @ 0.5A	Cat S 3966
4.8 Volt @ 0.7A	Cat S 3965
6.0 Volt @ 0.5A	Cat S 3984

$3.25ea



EVEREADY.

Heavy Duty Screw-Type Torch Globes

Heavy-duty screw-type torch globes.

1.2V @ 0.22A	Cat S 5081
2.3V @ 0.27A	Cat S 3948
2.5V @ 0.3A	Cat S 3947
3.7V @ 0.3A	Cat S 3944
6.2V @ 0.3A	Cat S 3946

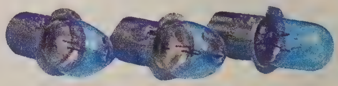
$2.65ea

EVEREADY.

Halogen Torch Globes

Stand captive fittings. Note: Hologen Bulbs operate at higher temperatures and should only be used in torches designed for their use!

2.8V @ 0.85A	Cat S 3950	$9.95
4.0V @ 0.85A	Cat S 3955	$9.95
5.5V @ 1.0A	Cat S 3960	$12.95



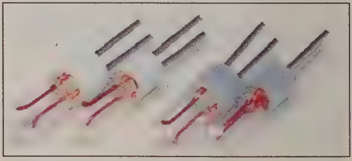
EVEREADY.

Krypton Globes

Higher performance, extra bright Krypton globes to suit most torches, lanterns, etc. Standard flange fit.

2.2V @ 0.47A	Cat S 3982
2.4V @ 0.7A	Cat S 3961
3.6V @ 0.75A	Cat S 3962
4.8V @ 0.75A	Cat S 3963

$3.65ea



Mini Torch Globes

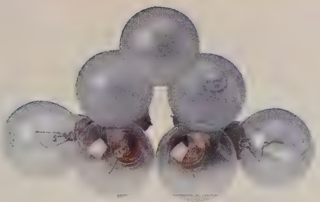
Used in many small torches and other devices. They come supplied in a packet of two.

1.2V @ 0.3A	Cat S 3985
2.6V @ 0.3A	Cat S 3986

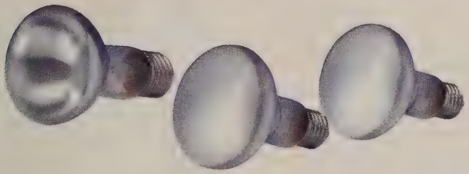
$6.95

Standard Lamp Bayonet Cap

General purpose 240V domestic and commercial lamps.



Cat No	Type	Watts	Price	Cat No	Type	Watts	Price
S5006	Pearl	75	**$1.65**	S 5108	Clear	100	**$1.65**
S5039	Clear	75	**$1.65**	S 5109	Pearl	100	**$1.65**



Eddison Screw Reflector Globes

240V lights are ideal for shop windows, sales areas or where a focused light beam is required.

Cat No	Watts	Price	Cat No	Watts	Price
S 5001	60	**$4.95**	S 5003	60	**$4.95**
S 5014	75	**$4.95**	S 5008	100	**$6.95**

Standard Lamp Eddison Screw

Cat No	Type	Watts	Price
S 5041	Pearl	75	**$1.75**

Luster Lamps

Small space saving dimensions make these 240V lamps ideal for decorative lighting and a multitude of small luminaries.

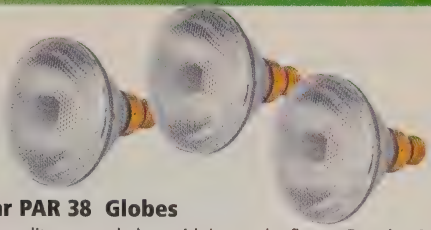
Cat No	Description	Watts
S 5116	2 x Clear Globes	40
S 5117	2 x Frost Globes	40

$6.95pk

Candle Lamps

Cat No	Description	Watts
S 5107	Candle Frost x 2	40
S 5110	Candle Plain x 2	40
S 5106	Candle Clear x 2	60
S 5111	Candle Frost x 2	60
S 5112	Candle Clear Twist x 2	40
S 5113	Candle Frost Twist x 2	40
S 5114	Candle Clear Twist x 2	60
S 5115	Candle Frost Twist x 2	60

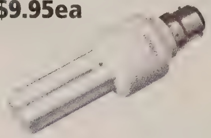
$4.95pk



Clear PAR 38 Globes

High-quality pressed glass with internal reflector. Rated at 240V, 150 Watts. Edison screw (ES) fitting.

Description	Cat No	Price
Clear (150W)	S 5129	**$9.95ea**



Energy Saving Lamps

The Osram range of Dulux EL compact fluorescent lamps provides a direct replacement or standard GLS lamps. Incorporating electronic control gear that provides an instant, flicker free start, the Dulux EL is 80% cheaper to run when compared to an equivalent GLS lamp. Available in both ES and BC cap, they are ideal for domestic and commercial applications. A wide range of wattages is available, all with a rated life of 8000 hours.

Cat S 5131	11 watt	Screw Base
Cat S 5132	11 watt	Bayonet Base
Cat S 5133	15 watt	Screw Base
Cat S 5134	15 watt	Bayonet Base
Cat S 5135	20 watt	Screw Base
Cat S 5136	20 watt	Bayonet Base

$24.95ea

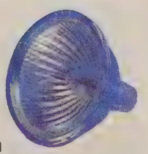
Pilot Lamps

Ideal for technical use where little space is available. Also used in refrigerators, freezers and ovens.

Cat No	Type	Price
S 5044	15W Eddison Screw	**$4.95**
S 5119	15W Bayonet Cap	**$4.95**

Dichroic Lamps

Ideal for general lighting displays. Average life 4,000 hours for 50W.
Cat S 8452



$16.95ea

Heat Lamps

Great for heating your bathroom efficiently.
250 watt.
Cat S 5130

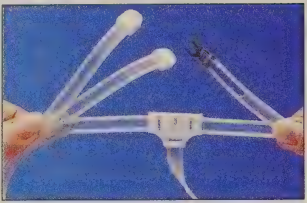
$14.95

TV Antenna – Rabbit Ears

Indoor FM Radio/TV Antenna

Great as an FM antenna for your tuner or as a VHF TV antenna in prime reception areas. Find the best reception position, and stick it up with tacks or adhesive.
L 4060

$9.95



Plug-In Rabbit Ears Antenna

Damaged your rabbit ears antenna? Here's the perfect low-cost replacement! Simply plug these ears into your old base. Picks up VHF channels 1-11 in good reception areas.
Cat L 4655

$16.95

Rabbit Ears

A reliable, economical alternative to an outdoor antenna. Ideal for VHF channels 1-11 in good reception areas. Comes with coax plug connection.
Cat L 4015

$24.95

Indoor Antenna

This new design picks up VHF/UHF/FM and is especially good for UHF. It is a modern design which looks good on your TV.
Cat L 4017

$26.95

High Quality Rabbit Ears

A quality VHF/FM antenna for good reception areas or where outdoor systems are inappropriate. The antenna rotates 180∞ for easy adjustment.
Cat L 4011

$29.95

Deluxe Indoor UHF/VHF Antenna

Best suited for strong reception areas (metropolitan areas), this indoor antenna has an adjustable UHF dish and tuning knob that's also good for VHF and FM. Comes with coax cable and plug.
Cat L 4005

$34.95

Amplified Rabbit Ears

New indoor VHF/UHF TV antenna with built-in amplifier which has adjustable gain. It has a non scratch, non slip base and a pleasing soft granite finish to complement modern televisions. It comes complete with power adaptor and connecting leads.
Cat L 4016

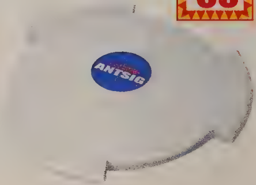
$49.95

Boat/Caravan Antenna

NEW FOR '99

VHF/UHF antenna with built-in amplifier. It has 360° reception so does not have to be pointed in a particular direction. It comes complete with a 12v power supply. It has a weatherproof plastic case and is supplied with mounting bracket.
Cat L 4078

$79.95



Product may vary from one shown

All outdoor antennas are specially made for New Zealand conditions

For Prime Signal Areas

Budget Combination UHF/VHF Antenna

Ideal for metropolitan or good reception areas. It has provision for either vertical or horizontal mounting and feature corrosion resistant construction for longer, trouble free life. VHF channels 1-11/UHF 21-69.

Cat L 4668 **$89.95**

For Fringe Signal Areas

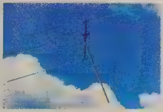
VHF/UHF Combination Antenna

A high gain combination antenna which can be used in poor signal areas to pick up VHF as well as UHF. VHF channels 1-11 UHF channels 21-36.

Cat L 4661 **$159.95**

For Prime Signal Areas

AS3 VHF

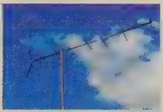


For picking up VHF channels 1-3 it is high gain over this frequency range. Constructed with a long-lasting finish, horizontally or vertically mounted.

Cat L 4646 **$89.95**

For Medium Signal Areas

ASA10 VHF



This 6 element antenna is designed for medium reception areas, tuned to receive VHF channels 4-11, easy to install and can be horizontally or vertically mounted.

Cat L 4647 **$99.95**

For Prime Signal Areas

Yagi-Style UHF TV Antenna To Suit Channels 21-69

This UHF antenna has 2 reflectors for improved reception, can be either horizontally or vertically mounted and features a long-lasting corrosion-resistant finish. 12 element wideband VHF.

Cat L 4079 **$69.95**

For Prime Signal Areas

UHF Ch. 21-69

An up-to-date 23-element design, it receives all UHF channels from 21 to 69. Provision is made so the antenna can be tilted where necessary and it can be easily mounted on any standard antenna mast. Includes balun for coax connection.

Cat L 4086 **$89.95**

For Fringe Signal Areas

Channels 21-69 Deluxe UHF

With 43 elements, this antenna is best suited to medium reception areas. It's tuned for reception of channels 21-69 and can be mounted vertically or horizontally. Comes complete with balun for coax connection.

Cat L 4084 **$99.95**

For Medium Signal Areas

VHF Suburban

An antenna for suburban use. VHF for channels 1-11. Can also be vertically or horizontally mounted. Great value.

Cat L 4649 **$99.95**

For Medium Signal Areas

VHF Antighosting

Antighosting antenna is ideal for medium reception areas. VHF channels 1-11. Corrosion resistant finish.

Cat L 4650 **$139.95**

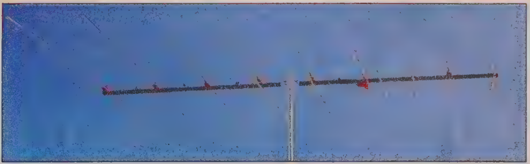
For Deep Fringe Signal Areas

UHF Ch. 21-69

Antenna with 91 elements for deep fringe area reception on all UHF channels from 21-69. Mount on any standard antenna mast.

Cat L 4088 **$149.95**

For Fringe Signal Areas



Antighosting Antenna

High-gain, suited for those fringe reception areas. VHF channels 1-11. Antighosting ensures no annoying shadows. Vertically or horizontally mounted.

Cat L 4651 **$155**

Amplifiers

GME Kingray
SA122 TV SIGNAL BOOSTER
MADE IN AUSTRALIA

2-Way TV/ FM Splitter Amplifier

A great low-cost splitter amplifier that's easy to install. Australian made, it features VHF/12dB & UHF 12dB gain and 2-way coaxial outlets.
Cat L 4215

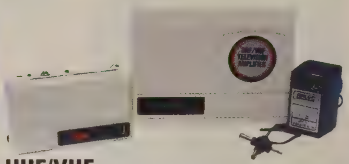
$69.95

ANTSIG
INPUT
CODE II
FM/VHF/UHF
2-WAY TV/VCR
DISTRIBUTION AMP.

TV Amplifier With 2-Way Splitter

Ideal for home viewers who want good reception when operating multiple TVs from a single antenna. For in line amplification of VHF/UHF TV channels. Includes power supply.
Cat L 4216

$89.95



UHF/VHF Masthead TV Amplifier

Designed for VHF/FM/UHF channels. Provides high gain with extremely low noise level & comes with power supply and mast clamp. Variable gain for best results in differing signal strength areas. Maximum gain 35db.
Cat L 4205

$99.95

TV Extension Leads & Connectors

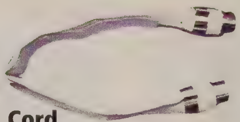
TV Extension Lead with Adaptor Plug

1.5m Cat L 4269	**$10.95**
6m Cat L 4268	**$18.95**
10m Cat L 4271	**$22.95**

10m Coax Cable Pack with Balun

Cat L 4466

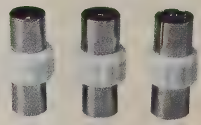
$24.95



Flexi Cord with Female Connections

75 ohm connector that comes with adhesive tape to fix the cord to hard to get at places.
Cat L 4666

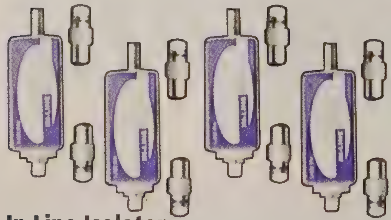
$5.95



TV Coax Joiners

Pack of 3: Male-Male; Female-Female; Male-Female.
Cat L 4452

$6.95



In Line Isolator 75 ohms

Protections from voltage penetration from the antenna system to the TV/VCR. Recommended in areas prone to lightening, high mast and satellite antenna installation and other similar situations. Safety standards recommend use of these items in an antenna system. With standard coax fittings.
Cat L 4665

$19.95ea

Games/Computer TV Switch

If you play computer/ video games through your TV, avoid the hassle of unplugging the system every time you want to watch. Just a flick of this switch allows you to swap between watching TV and playing games.
Cat L 4501

$16.95ea

ANT
TV
MIN
MAX
MODEL ATT 2968 VARIABLE ATTENUATOR

Variable Attenuator 0-22db Signal Level Reducer

Used in situations when reception signal is too strong, and signal balance is necessary to assist one channel more than others.
Cat L 4482

$19.95

Antenna Mounts

Masts

Jigger Boom Vertical Stand Off Mast 6mm
Cat L 4637 $19.95

Fascia Mount 1.2 meter for Barge
Cat L 4642 $19.95

Fascia Mount2.1 meter for Barge
Cat L 4641 $26.95

Extensions

Straight Mast 1 meter extension
Cat L 4631 $16.95

Stays/Brackets

Stay 1.2 meter mast clamp (pair)
Cat L 4635 $26.95

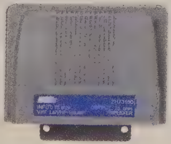
Stay 1.8 meter mast clamp (pair)
Cat L 4634 $29.95

Clamp

U Bolt and V Block. Set 8mm large.
Cat L 4166 $7.95

Masthead Diplexer

Housed in a weatherproof enclosure for masthead fixing with provision for 300 Ohm or 75 Ohm connections. Can be used indoors or outdoors.
Cat L 4469 $19.95

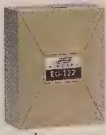


Triplexer

This quality triplexer has an input for VHF Low, VHF High, UHF. It combines these signals to a single 75 ohm output.
Cat L 2259 $26.95

Antenna Splitters

Used when one antenna is connected to multiple TVs, videos, etc (can sometimes be used in reverse). All are designed for indoor use.



2-Way Coax Splitter

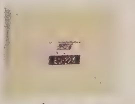
75 Ohm splitter permits 2 outlets from one antenna. Covers 50-890MHz. Isolation 25dB. Insertion loss 3.5dB. Can be used in reverse.
Cat L 4472 $9.95

2-Way Plug Type Splitter

75 Ohm splitter permits 2 outlets. Fitted with standard coaxial plugs and sockets so connection is simple.
Cat L 4270 $12.95

Right Angle 2 Way Splitter

Cat L 4272 $12.95

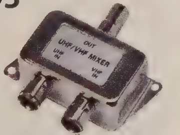


4-Way Coax Splitter

75 Ohm splitter permits 4 outlets from one antenna. Can be used in reverse.
Cat L 4474 $14.95

4-Way Plug Type Splitter

75 ohm splitter permits 4 outlets. Fitted with standard coaxial plugs for simple installation.
Cat L 4664 $16.95



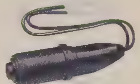
Indoor VHF/UHF Mixer

Strong metal housing with separate VHF and UHF inputs and a single output.
Cat L 4663 $16.95

UHF/VHF Separator

Provides 2 separate equal outputs from a single antenna input. Used where TV receivers have separate UHF and VHF antenna sockets.
Cat L 4480 $12.95

TV Baluns



A. Indoor/ Outdoor Balun

For matching 75 Ohm coaxial cable to 300 Ohm ribbon terminals on your TV, tuner or antenna. It's weather-resistant so can be used indoors or out.
Cat L 4465 $9.95

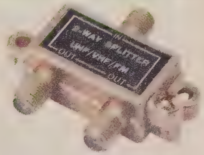
B. Universal Balun

With 300 Ohm screw terminals and 75 Ohm coaxial plug - can be used either way around. For indoor use, it's ideal if you're not sure which type of balun you require.
Cat L 4456 $8.95

C. Balun Socket

Simply fixes to the 300 Ohm terminals on your TV and converts it to a 75 Ohm coaxial socket. Ideal for TV games on the old black & white set. Indoor use only.
Cat L 4454 $9.95

F Connectors



Two- Way 'F' Connector Splitter

Allows the connection of two devices to one antenna. Suits VHF, UHF and FM radio. 75 Ohm.
Cat L 4221 $8.95

Three-Way 'F' Connector Splitter

Connect up to three devices to one antenna including your TV, VCR and FM radio. 75 Ohms
Cat L 4222 $9.95

Four-way 'F' Connector Splitter

Simply attach to cable and you can hook up four devices to one antenna. 75 Ohm.
Cat L 4223 $10.95

Connectors

Connects your cable to your antenna and TV/video.
Packet of four.

F59 Read Packet of 4
Cat L 4225 $8.95

F56 Read Packet of 4
Cat L 4226 $8.95

What is Shortwave Radio?

Shortwave radio is one of the most exciting and informative mediums available. What's more, it's also one of the most accessible. Once you discover shortwave, you'll almost certainly want more. So, what is shortwave radio? Shortwave radio stations are just like the local stations that you're listening to currently, except that shortwave radio caters for an international audience, not just a local community.

Most countries have their own shortwave radio stations... Radio Australia, the BBC world service, Voice of America, Radio Moscow, etc. For instance, Radio Australia broadcasts in nine languages to an estimated 50 million regular listeners. Because shortwave is targeted at this international audience, it provides a diversity and depth of programming that doesn't exist in local radio.

Shortwave is also a fantastic introduction to the world of amateur radio, and many people decide to take up this fascinating hobby after listening to shortwave radio.

What equipment is needed?

One thing that makes shortwave radio an attractive hobby is that it's very affordable. Small radios with a few shortwave bands are quite inexpensive and they're a great way to discover what shortwave has to offer. They usually have AM/FM reception as well, so they can be used as a normal radio for your favourite local stations but allow you the extra freedom to comb the dial discovering the fantastic world of shortwave radio. More sophisticated receivers are also available and these will usually provide better reception, but at a higher price.

Choosing a Receiver

These days, there is a great range of shortwave radios available. There can be an enormous difference in the cost of these and the one you choose will largely depend on your budget and any specific interest you have in shortwave.

For those with a casual interest, or if you're just starting out in SW listening, you may be able to get by with a radio which covers just a few shortwave bands. These are usually adequate for listening to the stronger SW stations.

SANGEAN
PLL

The mid-range receivers usually cover only those frequency segments used by the major SW broadcasters rather than the entire High Frequency (H.F.) band. Consequently, the frequency segments, or bands, covered are much more easily tuned. This process is called 'Band Spreading'. Some of these may also have digital tuning, which enables you to key-in the exact frequency that you want to listen to.

Top of the range SW receivers will generally cover all of the H.F. band, including SW and commercial frequency bands. They will have better selectivity, sensitivity and dynamic range, making it easier to tune stations. These days, they usually have digital tuning and offer a host of extra features as well.

The better the receiver, the greater its ability to receive only the frequency that it is tuned for and to reject other frequencies. The selectivity, or ability to separate stations close in frequency, can mean the difference between hearing a station clearly, and having it masked by a station on a nearby frequency.

Though sensitivity is often quoted in specifications, it is not the overriding factor since poor selectivity and dynamic range can make high sensitivity useless. In general, a receiver with modest sensitivity, good dynamic range and good selectivity is best.

Shortwave radio stations broadcast in the AM or Amplitude Modulation mode just as local radio stations do. Other transmissions, like those by amateur radio operators and commercial users, may use a different mode called Single Side Band or SSB. To receive these, your radio must either have a special SSB mode, or be equipped with a Beat Frequency Oscillator (BFO). The same applies if you want to listen to morse code.

The Antenna

There are many strong stations that can be heard with just the inbuilt telescopic antenna of a portable radio, but if you want to pick up some of the weaker stations, a simple, inexpensive outdoor antenna will be a great help.

A typical simple antenna is just a long piece of wire strung between two supports. It should be placed as high as possible above the ground, and as far away from power lines and other noise sources as possible. The ends of the antenna must not be tied directly to the supports but should be separated from the supports by a short length of nylon rope and egg insulators. The antenna wire should be PVC insulated so that it will be less likely to corrode.

Between the antenna and the back of the radio, it will be necessary to have a lead-in wire. Any flexible PVC covered wire will do. Remember, for safety, don't run the antenna or lead-in wire anywhere near power lines.

In addition to a good antenna, a good earth may improve low frequency reception by reducing noise. An earth connection is ideally a short wire running from the receiver's earth terminal to a metal pipe spiked, in a damp location, in the ground.

Not all radios have provision for an antenna and earth connection. However, simply running a good antenna wire near a portable radio can improve reception. Play it safe and always disconnect an outdoor antenna when not in use, and during electrical storms.

Time Difference

Most broadcasters use Universal Time Co-ordinated (UTC), more commonly referred to previously as Greenwich Mean Time (GMT). This is a 24 hour system with the format hhmm, with "hh" representing the hours and "mm" the minutes. New Zealand is normally 12 hours ahead of UTC, so 1020 UTC will be 2220 or 10:20 pm in New Zealand, and 2300 will be 11:00 am the following day.

Frequency and Wavelength

All radio and television stations transmit on a particular frequency (or range of frequencies). Frequency is a measure of how often something happens, or how many complete cycles occur in a particular time period.

In radio communications we are interested in how many complete cycles occur in one second. The unit for this measurement is the HERTZ (Hz) which formerly had the more descriptive name of Cycles per Second.

The larger units kilohertz (kHz = Hz x 1000), (formerly kilocycles) and megahertz (MHz = kHz x 1000) are often used in radio communication.

Wavelength is related to frequency. It is a measure of the length of one cycle of a wave in the medium through which it travels. Radio waves travel through space at a speed close to the speed of light which is approximately 300,000,000 metres per second.

Most stations identify themselves as transmitting on a particular frequency, however, some broadcasters express this as a wavelength, for example, a broadcast may advise they are 'closing down transmissions on 13 metres', which means that their signals in the 21MHz S.W band will cease shortly. To calculate the wavelength (in metres) simply apply this formula:

$$\text{Wavelength} = \frac{300{,}000{,}000}{\text{Freq.(Hz)}} \quad \text{or} \quad \frac{300}{\text{Freq.(MHz)}}$$

Local AM radio stations broadcast on frequencies ranging from 531kHz to 1602kHz (wavelength of 565 to 187 metres), and this is known as the medium wave band.

Shortwave radio stations broadcast on frequencies between 2MHz and 30MHz (wavelengths of 150 to 10 metres). These wavelengths are shorter than those in the medium wave band hence the name shortwave.

Published frequency lists, such as those in the World Radio and TV Handbook, and those issued by some S.W broadcasters, generally list frequencies in kHz. As many receivers, especially those using digital tuning, show frequencies in a MHz format, it is important to remember the simple conversion between kHz and MHz.

e.g. 1000kHz = 1MHz
21350kHz = 21.350Mhz

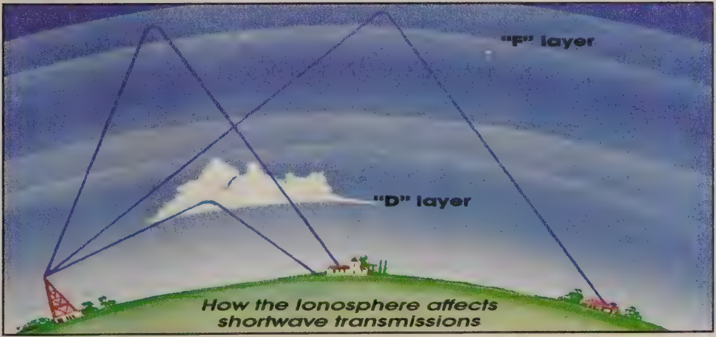
The Frequency Spectrum

Frequency	Frequency Band
10kHz-30kHz	VLF Very Low Frequency
30kHz-300kHz	LF Low Frequency (longwave)
300kHz-3MHz	MF Medium Frequency (medium wave)
3MHz-30MHz	HF High Frequency (shortwave)
30MHz-300MHz	VHF Very High Frequency
300MHz-3GHz	UHF Ultra High Frequency

Although shortwave radio operates mainly on the High Frequency (HF) bands, it is worthwhile knowing where these fit inside the overall spectrum. Shortwave radio stations do not have access to the entire 3-30MHz (HF) band since other services such as Commercial, Marine, Military and Amateur radio need a part of the spectrum as well.

The following frequencies are those common to shortwave radio broadcasts:

Frequency (kHz)	Wavelength (Metres)
5900 - 6200	49
7100 - 7350	41
9400 - 9900	31
11160 - 12100	25
13570 - 13870	22
15100 - 15800	19
17480 - 17900	16
21450 - 21750	13
25600 - 26100	11



How the Ionosphere affects shortwave transmissions

The Ionosphere

The ionosphere consists of several varying layers of ionized gas situated between 50 and 450km above the earth. It is the effect of the ionosphere on radio waves which allows shortwave signals to travel such long distances around the world.

The ionosphere is created when UV light from the sun reacts with the upper atmosphere. The outer level of the ionosphere known as the "F" layer, reflects shortwaves while the lower levels such as the "D" layer tend to absorb them. When no sunlight is present, the lower layers disappear completely, while the outer layers remain through some, or all, of the night.

Consequently, during the night, because there are no lower layers to absorb the radio waves and the upper layers can be very reflective, shortwave signals will travel further. You have probably already observed this phenomenon with your AM radio. During the day, reception from your local stations is quite good, but in the evening you can pick up much more distant AM stations. For instance, if you live in Wellington, you may be able to pick up stations broadcasting from Auckland in the evening, but not necessarily during the day.

High solar sunspot activity increases the level of ionization of the ionosphere, improving long distance communication. Sunspot activity occurs in cycles lasting approximately 11 years.

Fading

Radio signals can reach a receiver along the ground (ground waves) and via reflection from the ionosphere. Sometimes a signal can reach the receiver by two or more paths, and depending on the distance of each path, the signals may add or cancel. This can cause the signal strength to alternate between high and low levels. This phenomenon is called fading and is observed on the medium and shortwave bands.

Further Reading

If you'd like to know more about the fascinating and informative world of shortwave radio, we recommend the 1999 World Radio & TV Handbook, Edition (DSE Cat No. B 2099) and the Passport to World Band Radio 99 (DSE Cat No. B 2060). They list all the radio and TV stations by country and frequency, as well as regular satellite broadcasts. Up to date information on operating times, transmitter powers, languages, addresses, time signal stations and reception conditions make these books the perfect companion for your shortwave radio.

Shortwave & VHF Multi-Band Radio

It covers all 40 CB channels, shortwave and VHF. Plus, with the built-in direction finder, you can plot your position against known AM radio stations. A variable BFO (Beat Frequency Oscillator) also allows reception of SSB marine, shortwave and CB channels. Mains powered, it requires 4 x "D" batteries for portable use. Features • Signal Strength meter & Fine-Tuning control • External antenna socket • AM and FM broadcast bands • VHF (55-218MHz): TV sound (Ch. 1-10), aircraft, HAM, VHF, Marine • Shortwave 1(2-6MHz): HF marine, HAM, International SW stations • Shortwave 2(15-30MHz): CB, HAM, International SW Stations • Includes shoulder strap and earphone. (Batteries not included.)

Cat D 2832

$159

SANGEAN

ATS-808 45-Memory Shortwave Receiver

Catch all your local AM and FM stations on Shortwave from around the world! Requires 6 x AA batteries or mains adaptor (M-9727 recommended).

Cat D 2829

$299

Features

• Keypad frequency entry • Auto-scanning or rotary tuning with fine/coarse control • 45 memories • Dual time settings & desk stand • Alarm & sleep timer • Keypad & dial tuning locks • Signal strength meter • Narrow/wide IF filters for improved SW reception • External shortwave antenna socket • Built-in whip antenna • 13 SW band divisions with direct access buttons • Complete with stereo earphones & protective case Longwave: 150-519kHz. Mediumwave: 520-1710kHz. Shortwave: 1.711-29.999MHz (continuous or in 13 pre-set SW bands) FM: 87.5-108MHz.

SANGEAN

ATS-909 Deluxe Shortwave Receiver

Has full AM/FM/LW coverage of local stations, and continuous 1.715-29.999 MHz coverage for international Shortwave signals, Commercial and Marine traffic, and Ham radio and CB transmissions. HF reception modes includes AM for shortwave broadcasters (1kHz and 5kHz tuning steps), and SSB for Ham, Commercial and Marine signals with tuning steps of 40Hz and 1kHz. 307 memories are for storing your favourite frequencies (261 on SW, 18 each for MW/FM, and 9 for LW), with battery-free EEPROM memory back-up. Requires 4 x "AA" batteries or AC mains adaptor (not included). Also has • Auto Tuning system for strongest signal location • Narrow/Wide I.F filters for clearer SW reception • FM stereo via earphones • Battery and signals strength indicator • External shortwave antenna socket • Worldtime clock covering 42 cities • Complete with stereo earphones, ANT-60 wind-up antenna, and carry case.

Cat D 2849

$449

SANGEAN

ATS-606A Compact 45-Memory Shortwave Receiver

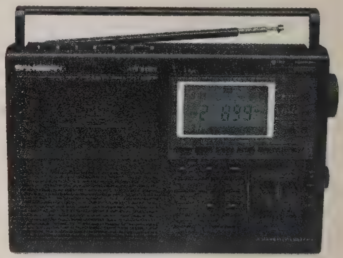
Features • Automatic Tuning System • 45 station memories • Scan tuning & Direct keypad tuning • Dual alarm clocks • Dual time setting • Adjustable sleep timer • DX/Local sensitivity switch • Lock switch • Soft carry case • Stereo earphones for FM stereo • Antenna socket • Size: 148 x 89 x 30mm (W x H x D). (Batteries not included.)

Cat D 2847

$249

SANGEAN

ATS-818CS All-Band World Receiver with Cassette



This professional-quality receiver is very easy to operate with 45 station memories and a large digital display.

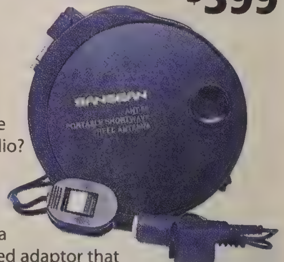
Features: • Covers AM/FM, Longwave (150 to 519kHz) and Shortwave (1.711 to 29.999MHz) in 1kHz steps. • Dual time display for local and UTC, plus full alarm clock functions • AM wide/narrow IF filters for clearer reception • Pushbutton selection of major SW bands from 120m to 11m • Adjustable RF gain prevents overloading from very strong signals • BFO (Beat Frequency Oscillator) control for receiving SSB & Morse Code signals • Cassette recorder with chrome tape facility, auto stop and standby recording function.

Cat D 2842

$399

SANGEAN

Portable Shortwave Antenna



Want to boost the performance of your portable shortwave radio? Then you need this wind-up reel-style antenna. It extends to a full 7 metres (23ft), yet fits in a shirt pocket! Connects via a 3.5mm mini plug or the supplied adaptor that clips onto your portable's telescopic antenna.

Cat D 4400

$19.95

Shortwave Antenna Kit

DICK SMITH SHORT WAVE AERIAL KIT
(No soldering required)

Get the very best from your equipment with this high-quality shortwave antenna kit. Comes ready-to-assemble with long wire antenna, lead-in, polyrope and "egg" insulators. It doesn't need soldering and comprehensive instructions are included.

Cat K-3490

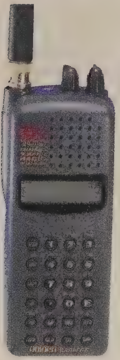
$39.95

Uniden

60XLT Scanner

Listen in on exciting radio frequencies including those used by commercial services, emergency services such as Ambulance, as well as Amateur and UHF PRS. This latest version Uniden 60XLT now includes 12.5kHz frequency steps on hi-band VHF. This 10-channel programmable VHF/UHF receiver covers the 66-88, 137-174 and 406-512MHz frequency ranges. Uses 4 x "AA" Alkaline or 4 x "AA" NiCad batteries (not included).
Cat D-2748

$199



Uniden

120XLT Scanning Receiver

Provides nine-band VHF/UHF coverage including airband, 100 memories, and improved super fast Scan and Search features (scan up to 100 channels/sec, search at 100 or 300 steps/sec). Covers 66-88 MHz, 108-174MHz, and 406-512MHz frequency ranges. Also features direct keypad channel access, 10 priority channels, data skip and memory back-up. Complete with NiCad battery pack, AC charger and detailed instructions.
Cat D-2752

$399

Uniden

3000XLT Scanning Receiver

The new Twin-Turbo 3000XLT scanner provides wide 16-band frequency coverage (25-549MHz, 760-1300Mz), a large back-lit LCD screen, 400 memories divided into 20 banks for easier scanning, together with super-fast Scan and Search functions (scan up to 100 channels/sec, search at 100 or 300 steps/sec). An Auto battery save circuit prolongs battery life while on standby, while Data Skip and Lock Out functions allow for faster scanning. Other features include Auto Sort for faster scanning. Other features include Auto Sort for faster bank scanning, 10 priority channels, selectable Search step sizes (5, 12.5, 25, 50kHz; and 30kHz on 800MHz), Scan/Search delays, battery-free memory back-up, and an Attenuator to reduce overload from very strong signals. Complete with NiCad battery pack, AC charger, flexible antenna, carry case and detailed instructions.

Sensitivity (nom. 12dB SINAD)	N.FM 0-3 – 0.5uV W.FM 1.2 – 2.5uV AM 0.4uV
Size (W x D x H)	69 x 39 x 187mm

Cat D-2730

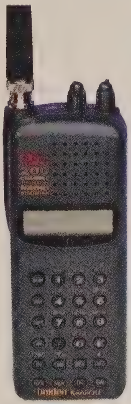
$599

Uniden

144XLT Desktop Scanner

Offers wide frequency coverage, yet is extremely easy to operate. With 16 programmable channels and 66-88, 137-174 and 406-512MHz coverage, it's great for listening to known VHF/UHF services. Through the use of a straightforward 2-digit LED display you can easily check what frequency is entered into each channel, and a specific frequency can be given priority status where necessary. Supplied complete with AC adaptor and telescopic antenna.
Cat D-2744

$199



Uniden

220XLT Scanning Receiver

Great performance in a compact package! The Twin Turbo 220XLT hand-held scanner provides ten-band VHF/UHF coverage including airband, 200 memories, super-fast Scan and Search features (scan up to 100 channels/sec, search at 100 or 300 steps/sec), and pre-programmed channel steps to suit most New Zealand conditions, including 800MHz. You also get Data Skip and Lock Out for faster scanning, direct keypad channel access, NiCad battery pack, AC charger and detailed instructions.
Cat D-2755

$499

Uniden

9000XLT Desktop Scanner

Our fastest desktop scanner, the Uniden 9000XLT provides excellent performance and many new functions for ease of operation. It sports a large back-lit, 2-line LCD screen, speedy Twin Turbo operation (scan at 100 channels/sec, search at up to 300 steps/sec) and 500 memories (of which 250 can have alpha character names stored). Frequency coverage is 25MHz to 549.95MHz and 760MHz to 1300MHz, with 4 selectable step rates, 10 priority channels and AM, FM narrow and FM wide reception modes. Supplied complete with an AC adaptor and telescopic antenna. Other features include • Auto memory sorting for faster scanning • Switchable attenuator to reduce overloading • Data skip and channel/ frequency lockout • Rotary tuning control • Scan/Search delay • Direct keypad frequency or memory entry • Jacks for line output and Aux. Control, and external speaker
Cat D-2739

$599

CAMNIS HSC-010 Scanner

A 1000 channel scanner, the Camnis HSC-010 provides continuous coverage of the 500kHz to 1300MHz range with selectable FM narrow, FM wide, and AM reception modes, together with 10 programmable Search Banks and battery-free EEPROM memory back-up. For Manual or Search operation you can select step rates between 5kHz and 995kHz in multiples of 5kHz or 12.5kHz, and Search speed is 20 channels/sec. Other features include a Priority channel, plus Attenuator to reduce overloads from strong signals. The HSC-010 is supplied complete with NiCad batteries and AC charger, carry case, belt-clip, cigarette lighter cable and carry strap.

Cat D 2793 **$499**

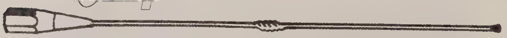
NEW FOR '99

Yupiteru MVT-9000EU Deluxe Scanner

The Yupiteru MVT-9000EU is an amazing new handheld scanner that provides wide 531kHz to 2039MHz frequency coverage, a large backlit LCD screen, and excellent sound quality. There are 18 selectable step rates between 50Hz and 125kHz to allow the best tuning choice for the signals being listened to. The MVT-9000EU provides 1000 memory channels (20 banks of 50 channels each) which can store frequency, frequency step, reception mode, as well as the Attenuator setting. Selected memory banks can be scanned to check on activity at a rate of up to 30 channels per second. Search operation is provided across 20 bands, with 500 Search Pass memories provided to "lock-out" unwanted frequencies. Other features include - Inbuilt ferrite rod antenna for AM broadcast band reception. Bargraph signal strength meter. 10 Priority channels. 50 Autowrite memories to store active frequencies during Search operation. Title editing for Band, Bank and channel name is provided. Complete with NiCad batteries, AC plugpack charger, car cigarette lighter lead, antenna, carry strap and belt-clip.

Cat D 2797 **YUPITERU** **$1100**

MOBILE ONE

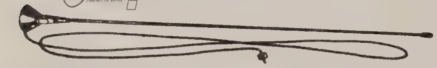


Compact Mobile Scanner Antenna

Improve your portable or mobile scanner's performance with this compact antenna. The 'Scantenna' covers VHF/UHF bands from 70MHz to 525MHz including VHF and UHF commercial, VHF aircraft and UHF CB channels. It's fitted with a standard 5/16" female thread (D 4516 base recommended) and is protected by a strong white heatshrink covering. Approx. 700mm long.

D 4434 **5 YEAR WARRANTY** **$24.95**

MOBILE ONE



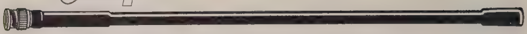
VHF/UHF Universal Antenna Kit

A 520mm stainless-steel whip, ideal for mid-band VHF to UHF (approx. 120MHz to 500MHz). It comes with cutting chart and a 5/16" coaxially-fed antenna base which fits most mounts. Complete with 3.6m of quality RG58C/U coaxial cable and a PL-259 plug.

D 4025 **5 YEAR WARRANTY**

$34.95

MOBILE ONE

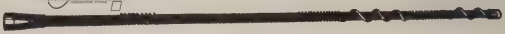


"Scanducky" Handheld Scanner Antenna

The "ScanDucky" is a wideband antenna designed for use with handheld scanners. It provides improved reception capabilities compared to the standard antenna supplied with most handheld scanners. Approximately 400mm long and moderately flexible, the Scanducky is fitted with a BNC plug which suits most scanners. Covers 25MHz to 1300MHz.

D 4433 **5 YEAR WARRANTY** **$34.95**

MOBILE ONE

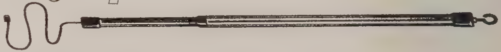


Mobile Scanner/Transceiver Antenna

The 'Bandspanner' not only covers the 25-1300MHz receive scanning range, but also allows transmissions on UHF PRS, several commercial bands, as well as the VHF Air band. It's an extremely effective mobile scanner antenna, providing high efficiency through the use of a wideband UHF whip with helical traps. Standard 5/16" thread.

D 4437 **5 YEAR WARRANTY** **$39.95**

MOBILE ONE

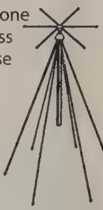


Base/Portable Scanner Antenna

Increase your scanner's coverage with this quality 1.2m long indoor antenna that covers the major scanner bands from 25MHz to 1300MHz. It's easy-to-mount with an inbuilt eye-hook, or it can be temporarily mast-mounted outdoors with optional clamps. Comes fitted with 3.5m of coax and a BNC plug allowing easy connection to most modern scanners.

D 4432 **5 YEAR WARRANTY** **$69.95**

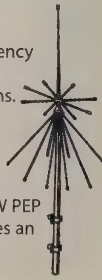
BENELEC Scanner Discone Antenna



This quality Australian-made 12 element scanner discone antenna provides excellent receive performance across the entire 60 to 1000MHz range, making it ideal for use with many of today's wide-band scanning receivers. Uses stainless steel rods as antenna elements, and comes complete with stainless-steel hose clamps for mounting the antenna to your mast. An SO-239 socket in the base of the antenna allows easy coax connection.

D 4845 **5 YEAR WARRANTY** **$129**

Diamond D-130J Discone Antenna



This 16 element Japanese antenna covers the frequency range 25-1300MHz and comes complete with mast-mounting hardware and simple to follow instructions. It's easy to assemble and install, and while the extensive stainless-steel construction makes it extremely durable, the wide frequency coverage means that it's ideal for use with scanning receivers and it can also be used with transmitters up to 200W PEP for the 6m, 2m, 70cm and 23cm amateur bands. Uses an SO-239 coax socket.

D 4840 **$199**

GME Electrophone

TX830N CB

Full 40 channel coverage with an interference suppression circuit for improved reception. Adjustable RF Gain Control. Instant Channel 15 Switch. LED signal Strength Indicator. Power/Modulation Indicator. Front Mounted Speaker. P.A. Function. External Speaker Socket. Suitable for Negative or Positive Earth Systems.
Cat D 1436

$229

Uniden

PC-122 Compact AM/SSB CB

With front-mounted microphone socket and a space-saving design, the super-compact PC-122 is ideal when limited dashboard space is available. It fits comfortably in most vehicles and is designed to match modern dashboards. Its superior features include: LED received signal and RF output indicators. Switchable noise limiter for clearer reception. Separate Volume Squelch, RF gain and Clarifier controls for easier operation. Covers all 40 channels on AM, LSB and USB. PA facility (requires optional speaker). Includes mic, mounting hardware and instruction manual.
Cat D 1425

$399

Uniden

PRO 510XL AM CB Radio

40 channel AM CB radio. LED channel display. Selectable automatic noise limited for improved reception. Comes complete with heavy duty microphone and in car mounting kit.
Cat D 1434

$249

Uniden

Grant XL AM/SSB CB

The Grant XL has solid construction, great audio quality and adjacent channel rejection, plus dual noise-reduction circuits mean it's right at home in either your vehicle or base station applications. Adjustable Mic gain and RF gain allows optimum settings for your application. Large back-lit meter for signal strength, RF output and antenna SWR. Noise blanker and automatic noise limiter helps reduce engine and background noise. Measures 200 x 235 x 60mm. Includes mic, mounting hardware and detailed instructions.
Cat D 1482 (Customer Order Only)

$580

CB Speakers

digitor

CB Extension Speaker

A compact 8 ohm extension speaker ideal for use with most CBs and scanning receivers. Uses a highly-sensitive 57mm plastic-cone 5W speaker for clear audio and comes with mounting bracket, screws and a 1.5m lead fitted with 3.5mm plug.
Cat D 2250

$22.50

Uniden

MS-100 CB Extension Speaker

A slimline 5W extension speaker for use where only a small mounting space is available. Comes with flush mounting bracket and lead fitted with a 3.5mm plug to suit most CBs and scanners. Size is: 73(W) x 66(H) x 37(D)mm.
Cat D 2275

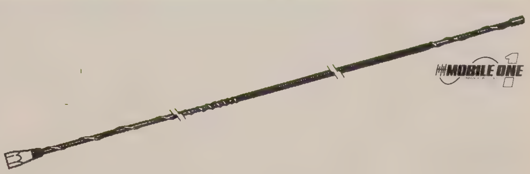
$29.95

CB Antennas

26 MHz 60" Antenna

Mobile One's unique spiroid wind produces an antenna that maximises signal, exhibits a balanced field distribution and uniform radiation pattern. The radiator is coated with tough wearing heatshrink tubing for total weather protection. Model DX160CDN
Cat D 4060

$19.95

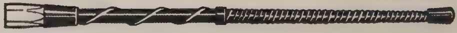


26 MHz 36" Antenna

These special whips are manufactured incorporating the latest computer technology in helix design and are wound on an extra flexible fibreglass former. All Flexiwhips are designed to withstand even the harsh extremes of the New Zealand environment and are coated with tough wearing heatshrink tubing for total weather protection. Model DX136FWN
Cat D 4061

$19.95

26MHz CB Antennas



26 MHz 12" Rubber Duck CB Antenna

The extra low profile allows the vehicle to go anywhere without the height restrictions of larger antennas. Its precision tuned coil is constructed of enamel coated wire wound on an almost indestructible former. Model RDRMNZ.

Cat D 4063

$24.95

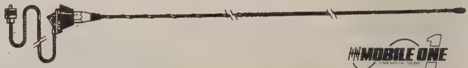
26 MHz 35" Adjustable CB Antenna

Created for the user who wants the versatility of Adjustable Tip Tuning combined with a lightweight antenna suitable for easy removal and re-installation if necessary. Designed for light duty use and suit many mounting applications such as Roof, Gutter, Mirror or Cowl Mount. Model DX435NZ.

Cat D 4062

$29.95

36" Antenna, Base, Lead and Connector

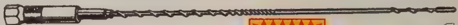


This pack contains a 36" helical whip antenna, 1/2 wavelength (3.6m) of RG58 coaxial cable, 1 x PL-259 connector and an antenna base, a mount all predetermined and tested. The complete whip is encapsulated in a PVC heatshrink coating for total protection against the environment. Model DX136FWNZ/A12C.

Cat D 4064

$29.95

Fold-Down 90cm Helical Antenna



A precision-wound helical whip with Mobile One's exclusive locking snap-down hinge built into the antenna's base. It's ideal for those installations where the antenna needs to be folded down to clear overhead obstructions (eg. when entering a car park or garage). Standard 5/16" female termination. Model DX-136LSDNZ.

Cat D 4150 **5 YEAR WARRANTY**

NEW FOR '99

$39.95

1.5m Helical Antenna Pack

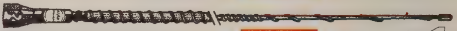
The most popular of all our CB antennas, providing high performance in a compact package. Comes complete with a 1.5m helically-wound whip antenna, antenna base and 3.6m coax fitted with a moulded PL-259 plug.

Cat D 4067 **5 YEAR WARRANTY**

NEW FOR '99

$39.95

1.5m 'Superhelical' Whip Antenna



This continuously-loading helical whip is wound onto a rugged fibreglass former with a constant turn winding, and exhibits a radiation pattern similar to a full-sized quarter-wave whip for greater range. Tough PVC heatshrink covering ensures excellent weatherproofing. Standard 5/16" female termination. Model DX160SHNZ.

Cat D 4151 **5 YEAR WARRANTY**

NEW FOR '99

$44.95

1.36m Heavy Duty Mobile Helical Antenna

Constructed with thick copper winding wire on a sturdy fibreglass rod and coated with a tough UV-resistant PVC heatshrink coating. This antenna has excellent performance and uses an adjustable tip tuning system. Standard 5/16" female termination. Model DX560NZ.

Cat D 4152 **5 YEAR WARRANTY**

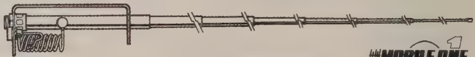
$54.95

26 MHz Heavy Duty 60" Antenna, Base & Lead Pack

The Mobile One Superhelical antenna kit is a complete antenna system suitable for the New Zealand 26 MHz Citizens Band. When mated with a stainless steel spring and a heavy duty antenna base, the antenna will provide excellent performance with the added benefit of a rugged spring and base mount.

Cat D 4068

$89.95

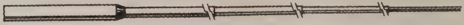


1/2 Wave CB Antenna

Omnidirectional vertical radiation. Physical 1/2 wave with 3/4 wave feed point. 50 ohm impedance. Ideal base station antenna.

Cat D 4426

$99.95



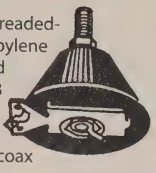
'Megatron' CB Antenna

High gain ground plane independent base station antenna with a tuned matching network providing a wide operating band width with low VSWR characteristic.

Cat D 4300

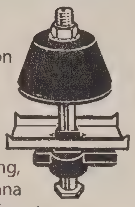
$99.95

Light-Duty Base



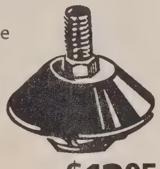
Standard 5/16" 26 TPI threaded-mount in black polypropylene plastic base. Suits loaded 1/4 wave and smaller CB antennas or small VHF whips. Mounting plate includes solder lugs for coax connection.
Cat D 4056 $\$9^{95}$

Solderless Light Duty Base



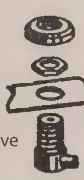
Reduce antenna installation time! This revolutionary new design allows you to install your coax cable without soldering! Because there's no soldering, this new 5/16" 26TPI antenna base can be re-used in different locations, time and time again.
Cat D 4054 $\$9^{95}$

VHF/UHF Base



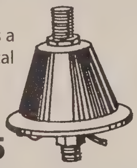
Waterproof design made especially for low loss VHF/UHF use. Cable enters through the bottom of the mount and terminates on the antenna thread.
Cat D 4516 $\$12^{95}$

SO-239 Antenna Base



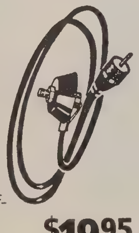
A waterproof coaxial SO-239 type base for use with PL-259 antennas. It's the ideal base when you often need to remove the antenna.
Cat D 4035 $\$17^{95}$

Heavy-Duty Base



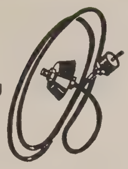
Standard 5/16" thread uses a stainless-steel rod and metal base plate for greater strength and reliability.
Cat D 4313 $\$24^{95}$

Antenna Base With Lead



Standard 5/16" threaded base with 3m of quality coax and PL-259 plug attached. Mount it directly, or use it with our gutter mount, 'Z' brackets, boot mount, or mirror/roof-rack mount.
Cat D 4055 $\$19^{95}$

UHF Antenna Base With Lead

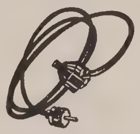


A UHF 5/16" threaded base with 3.6 metres of RG-58C/U coaxial cable and plug attached. You can mount it directly, or use it with virtually any of our mounting brackets.

PL-259 Plug Version
Cat D 4050 $\$24^{95}$

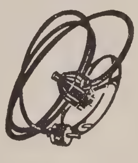
BNC Plug Version
Cat D 4051 $\$24^{95}$

Dipole Base And Lead Kit



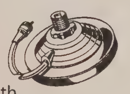
Moulded 5/16" base with 3.6m coaxial lead and PL-259 plug. Fits onto gutter, boot or mirror mount. Patented.
Cat D 4022 $\$29^{95}$

Universal Mount Magnetic Base



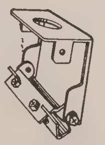
Don't like to drill a hole in your new car? This quality magnetic mount can be used with compact antennas (150g max.) and comes with a Mylar anti-scratch surface, 3.6 metres of coax, and fitted PL-259 plug. Standard 5/16" thread.
Cat D 4514 $\$49^{95}$

SO-239 Magnetic Antenna Mount



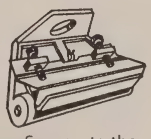
A powerful Japanese magnetic-mount for use with PL-259 antennas. It's supplied with 4m of quality coax cable and fitted PL-259 plug.
Cat D 4520 $\$69^{95}$

Light-Duty Gutter Mount



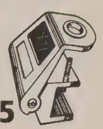
A light duty all stainless-steel gutter mount. Suitable for use with our D-4516 UHF antenna base when used with smaller antennas.
Cat D 5125 $\$19^{95}$

Low-Profile Gutter Mount



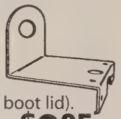
A sturdy gutter mount which reduces the total height of your antenna by mounting it slightly lower than a standard base. Secures to the roof gutter and has variable angle adjustment.
Cat D 5110 $\$24^{95}$

Heavy-Duty Gutter Mount



A heavy-duty Japanese gutter mount to suit most vehicles. Secures to the roof gutter with two screws and has variable angle adjustment.
Cat D 5100 $\$19^{95}$

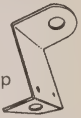
"Z" Type Mounting Bracket



A sturdy bracket for attaching the antenna base to the boot lip. (The bolts/holes are concealed in the water channel under the boot lid).

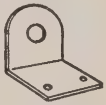
Standard	Cat D 5150	$\$9^{95}$
Black Zinc	Cat D 5152	$\$9^{95}$
Stainless Steel	Cat D 5153	$\$12^{95}$

Angled "Z" Mounting Bracket



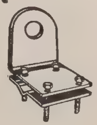
A quality stainless-steel "Z" bracket with an angled base for mounting on a vehicle with a sloping boot-lid. Designed to keep the antenna as close as possible to a vertical position.
Cat D 5155 $\$12^{95}$

"L" Style Mounting Bracket



A stainless-steel "L" shaped bracket for mounting an antenna base on the inside of the vehicle's boot or bonnet lip. It comes with two stainless-steel self-tapping screws.
Cat D 5160 $\$9^{95}$

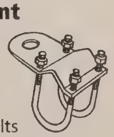
Mirror/Roof Rack Mount



Allows most standard CB antennas to be mounted on a truck style side-mirror or car roof-rack.
Cat D 4512 $\$14^{95}$

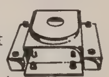
Stainless Steel
Cat D 4519 $\$19^{95}$

Bull-Bar Antenna Mount



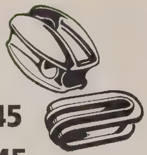
Designed for mounting small to medium antennas on a 4WD bull-bar. Uses a rugged black zinc-coated mounting plate with stainless-steel U-bolts and hardware for a long life.
Cat D 5165 $\$22^{95}$

Boot/Bonnet Mount



Stainless-steel boot or bonnet mount. It grips the top edge of the boot lid with non-scratch bumpers. Stainless-steel screws secure it to the underside of the boot lid. Suits all but the biggest antennas.
Cat D 4515 $\$24^{95}$

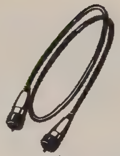
Egg Insulators



Tough egg insulators for antenna arrays and guy wires.

Small nylon $1.45
Cat D 5300
Medium nylon $2.45
Cat D 5302

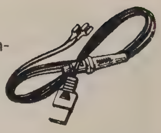
1m Coax Patch Lead



A handy coax patch lead with a moulded PL-259 plug on both ends.
Cat D 9010

$12.50

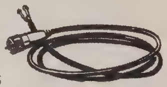
DC Power Leads



DC power leads, with in-line fuse holder, to suit a variety of old and new CBs. 3 Pin Suits Uniden CBs.
Cat D 9001

$14.95ea

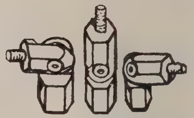
4m Coax Lead



4 metres of quality coaxial cable fitted with spade connectors on one end and a PL-259 plug on the other.
Cat D 9012

$11.50

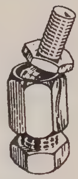
Folding Angle Adaptor



A medium-duty folding angle adaptor which allows 180° movement so the base can be mounted at almost any angle while the antenna remains vertical. Suitable for small to medium whips.
Cat D 4507

$19.95

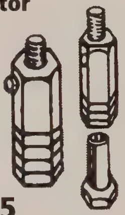
Slope Adjuster



Allows you to swivel the antenna up to 30° so that correct vertical adjustment can be maintained when the base is on an angle. Suitable for small whips.
Cat D 4508

$19.95

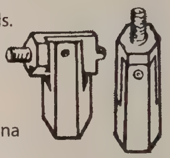
Quick-Release Adaptor



Saves your antenna being stolen! This adaptor allows you to remove your antenna from its mount with a quick release button. Adjust antenna SWR after fitting.
Cat D 4501

$19.95

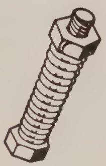
Folding Snap-Down Adaptor



Standard 5/16″ threads. Allows CB and similar antennas to be folded down in car parks etc, without removal. Adjust antenna SWR after fitting.
Cat D 4506

$24.95

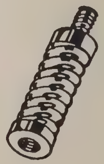
Compact Stainless Steel Spring



A lightweight spring which reduces the damage caused to standard helical whips from common everyday hazards such as low carpark roofs and overhanging trees.
Cat D 4500

$24.95

Medium Stainless Steel Spring



Suitable for medium to large antennas with a standard 5/16″ thread fitting. Stainless steel construction ensures a long life.
Cat D 4509

$34.95

FM Transceivers

digitor

Long Range Toy Walkie Talkies

Very high quality toy walkies with a long range of up to 200m (over open ground). They operate on the 27MHz band and use FM transmissions for great audio quality. You don't need a license to operate them and they come complete with a sturdy telescopic antenna. Each unit requires a 9V battery.
Cat D 1090

$69.95pr

digitor

Hands-free FM Transceiver

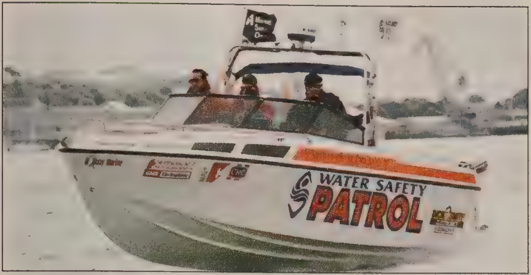
This hands-free FM transceiver offers exceptional quality and value for money. It's ideal for first-time users such as sporting clubs, schools, farmers and bushwalkers with no license required and can provide up to 500m range (line-of-sight). Because it operates on a high VHF frequency, you're less likely to experience noise or interference from other transmitters. It comes complete with belt clip and an earpiece/tie-clasp microphone for voice-activated hands-free operation. Features include selectable push-to-talk or voice activation and a sensitive dual-conversion receiver for clearer reception. Requires a 9V battery.
Cat D 1461

$69.95ea

Headset/ Microphone

A lightweight headset/microphone designed to suit the D-1461 55MHz transceiver. Provides improved audio clarity in noisy areas. Simply plugs into the transceiver in place of the standard earpiece/microphone.
Cat D 2020

$29.95



VHF marine radios are a must for all boat users. Not only are they a great way to find where the fish are biting or just to talk to another friendly boat user but are vital in emergencies. It is recommended by the Ministry of Commerce Radio Communication's division and the Coast Guard that every boat should have a VHF Marine radio on board.

Features	MC535	MC1020	HH955	HH940	HH980
All Channel Scan		✓	✓	✓	✓
Battery Capacity/Standby	N/A	N/A	600mAH /15Hrs	400mAH 15Hrs	900mA/ 20Hrs
External Speaker Jack	✓	✓			
External Speaker Microphone Jack			✓		✓
Illuminated Display	✓	✓	✓	✓	✓
Transmit Power	1 or 25W	1 or 25W	1 or 5W	1W	1 or 5W
User Selectable Scan		✓	✓		✓
Splashproof	✓	✓	✓	✓	✓

Uniden

HH955

5 watt handheld, weatherproof design with all international and USA Channels. Features include Triple Watch, Memory Scan, Battery Charge Indicator and Alkaline Battery capability. 3 year warranty.

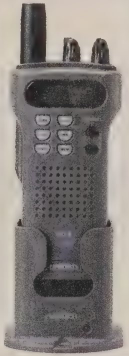
Cat D 1734 **$349**

Uniden

HH940

1 watt handheld, watertight to US Coast Guard CFR46 Standard, small, lightweight wearable design with all international and USA Marine VHF Channels, Triple Watch and All Channel Scan. 3 year warranty.

Cat D 1726 **$399**



Uniden

HH980

5 watt handheld, watertight to U.S. Coast Guard CFR46 standard, all international and USA channels, 1 watt and 5 watt operation, instant channel 16 switch. Dual watch, open and memo scans, back lit LCD display, detachable rubber antenna.

Cat D 1727 **$599**

Special order only

Uniden

MC535

25 watt In-Boat, all international USA channels, 1 watt and 25 watt operation, instant channel 16 switch, dual watch, back lit LCD display.

Cat D 1731 **$349**

NEW FOR '99

3 YEAR WARRANTY

MC-1020 VHF Marine Radio

1 watt/25 watt in-boat VHF, all USA and International channels. Backlit keypad and LCD display, triple watch, all channel scan, weather alert.

Cat D 1737 **$449**

MOBILE ONE

pacific

VHF Marine Antenna

156-162 MHz, ground independent, comes with 3-6 metre cable. A perfect match for the Uniden MC535 (D-1731) or the Uniden MC-1010 (D 1733).

Cat D 4014 **$79.95**

Marine Antenna

1.8m halfwave Marine VHF antenna suitable for the Uniden MC535 or MC1020 marine VHF radios. Has 3dB gain and a fold down mount for when not in use.

Cat D 4084 **$99.95**

Mini Weather Station

A convenient way to keep an eye on the weather, at home or at the office. This mini weather station is small enough to fit almost anywhere, and provides an easy-to-follow forecast through the use of display symbols that indicate the likely local weather over the next 12-24 hours. These symbols include sunny, slightly cloudy, cloudy, rainy or stormy. Includes a temperature readout (with min/max memory), switchable 12/24 hour time readout, and a selectable high-efficiency electro-luminescent LCD backlit screen. Requires 4 x AAA batteries.
Cat D 3948

$69.95

Deluxe Weather Station

The Deluxe Weather Station features a very large LCD screen for easier viewing and can be either wall or desk-mounted. Provides greater temperature resolution, plus clock (with alarm) and a calendar function, plus selectable C/F temperature and mb/inHg pressure readouts. Other functions include an electronic barometer with "last 24 hrs" pressure trend graph and direct readout, relative humidity display and general weather forecast icons. Includes fold out desk stand. Measures 133 x 182 x 26mm (WHD). Requires 4 x AAA batteries.
Cat D 3954

$189.95

NEW FOR '99

WeatherView Software

This enhanced version of the standard WeatherView program (supplied with the WM-918) allows for the display of the Weather station data in a variety of formats, as well as enhancing the readability of data such as Wind activity. Graphing facilities are provided, with up to 4 graphs on one screen allowing easy comparison of relationships between individual weather parameters. Textual weather forecasts beyond that of the forecast icon on the WM-918 are also provided. Software is supplied on a 3.5" PC diskette.
Cat D 3962

$149

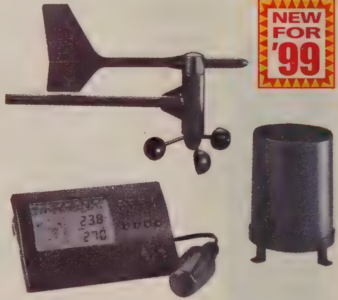
Compact Weather Station

Now everyone can keep track of the changing weather with their own home Weather Station. This stylish unit provides an Electronic barometer (with Altitude compensation) showing actual barometric pressure and its trend over the last 24 hours, so you can gauge the likely changes in the weather, or make use of the forecast that the Weather Station provides. Also measures indoor temperature and relative humidity to provide a Comfort indication. Desk or wall mountable. Measures 108 x 136 x 27mm (WHD). Requires 4 x "AAA" batteries.
Cat D 3952

$159.95

Advanced Home Weather Station

NEW FOR '99



This new electronic Weather Station is ideal for use at home or the office as its easy to read display helps you understand the changing phases in the local weather and gain a better understanding of what the near future weather will bring. The WM-918 Weather Station lets you monitor the air temperature, relative humidity, dew-point temperature (indoors and outdoors), as well as barometric pressure, wind speed/direction, wind chill and rainfall rate. This information helps it provide forecast icons for the weather 12-24 hours in advance in a 30-40km radius of its location, so you can plan your outdoor activities – from a picnic to simply knowing when to carry your umbrella. The WM-918 is easy to install, and is supplied complete with the Weather Station control panel, combined Anemometer and Wind vane, Rain gauge, external temperature and humidity sensor, connection box, cabling, various mounting hardware and an AC adaptor. 8 x "AAA" size batteries are required for operation.
Cat D 3960

$629

Check out the weather at our Head Office Weather Station by visiting the Dick Smith Web Site at **www.dse.co.nz.** Simply go to the page for the D-3960 Weather Station and click on the Dick Smith Electronics weather station link at the bottom

GARMIN®

What is GPS!

The global positioning system (GPS) is a satellite based navigation system consisting of a network of 24 orbiting satellites that are eleven thousand nautical miles up in space and in six different orbital paths. The satellites are constantly moving, making two complete orbits around the Earth in just under 24 hours. The orbital paths of these satellites take them between roughly 60° north and 60° south of the equator which means you can pick up the signals anywhere in the world, at any time. Each GPS satellite transmits (essentially) an ID code and its location at a certain time. The GPS receiver interprets the information from each satellite and by using information from three or more satellites, triangulates your current position in terms of latitude and longitude. With four or more satellites, altitude can also be determined.

Garmin Cigarette Lighter Adaptor

Guidance by GARMIN

This is a genuine Garmin vehicle cigarette lighter adaptor. This power supply suits the Garmin GPS 12 XL (D 3945) and 2 plus (D3926)

Cat D 3946

$79

GPS 2 Plus

The GPS 2 Plus has a large, state of the art display with two-way screen display for horizontal or vertical orientation. It also boasts 12 parallel channels and an external antenna for fast satellite acquisition and enhanced reception. Other features include dedicated zoom keys, selectable waypoint symbols, diagonal panning, auto start/stop trip timer and average and maximum speed recordings. The GPS II Plus also features the latest Garmin software featuring indepth data on New Zealand and South Pacific locations.

- 500 waypoints and 1024 trackpoints with 20 reversible routes
- Internal lithium backup battery
- Displays distance bearing, ETA and ETE to destination
- TracBack function allows you to retrace your steps without setting waypoints
- 4 x AA batteries (not included) provide up to 24 hours of use.

Cat D 3926

$529

GPS 12 Personal Navigator

The GPS 12 is an affordable handheld GPS for outdoor adventurers who want the power of 12 parallel channels and rugged waterproof toughness without spending a bundle. Its rocker pad design allows true one-handed operation and the backlit display allows you to use it at any time.

- 500 waypoints and 1024 trackpoints with 20 reversible routes
- TracBack function allows you to retrace your steps without setting waypoints
- Graphic compass and highway pages
- Lithium backup battery to keep waypoint and track data safe.

Cat D 3944

$399

Cigarette Lighter Adaptor

Suits Garmin GPS-12 and GPS-38 models. Provides easy power from a 12V DC lighter socket in a car or boat.

Cat D 3922

$99

Garmin GPS 12XL

The Garmin's GPS 12XL is all about performance. It features a 12 parallel channel receiver for amazingly fast satellite acquisition and tight satellite lock, even under tree cover. The GPS 12XL is loaded with navigation information including 105 pre-defined map datums and 7 grid formats. Store your camp sites and fishing spots among the 500 waypoints or add them to any of 20 routes. The proximity waypoint feature gives advanced waring of nearby hazards, while the TracBack function helps you find your way home. The GPS 12XL is paced in a rugged case that features military tough construction. Its rocker keypad design provides true one hand operation, while a user friendly operating system keeps you on the move day or night, rain or shine.

Features:

- Built in South Pacific point database
- Backlit LCD display
- Internal lithium memory backup battery
- Capable of using an optional external antenna

Cat D 3945

NEW FOR '99

$529

Personal Radio Service

PRS is an affordable way for two or more people to communicate over relatively large distances. It is a service that has **'no hidden costs', 'no monthly fees', 'no registration or licenses'** to obtain before the service can be used.

PRS transceivers operate at ultra high frequencies (UHF) and offer up to 40 channels of crystal clear communication. Extended range can also be achieved through repeaters. PRS radios come in two types – mobile and handheld with a large variety of models to suit many different requirements. All Dick Smith Electronics models are fully compatible with each other.

Mobile radios are designed to be used in vehicles but can easily be adapted for use as a base station. Handhelds are designed to be light and portable making it ideal for tradespeople, hikers and farmers etc. PRS offers the affordable answer to your communication needs now and in the future.

Uniden

UH-011 Mobile PRS Radio

Uniden
UH-011

For quality communication and value for money, the Uniden UH-011 offers superb reliability and ease of operation. Serious users will appreciate its host of professional features, including a programmable duplex facility allowing the labelling of selected channels for repeater operation (when the unit is tuned to those channels again, duplex mode is automatically activated). The UH-011 boasts bright LED indicators for TX, RX, CA and duplex operation, as well as an LED bargraph meter for received signal strength and power output. Controls are designed for fast, efficient operation, and the UH-011 comes with mobile mounting hardware and quality microphone. License not required. RFS approved.

Specifications:

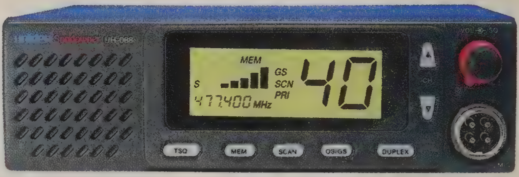
Channels: 40. Frequency Range: 476.425 to 477.400MHz. Carrier Power: 5W max. Voltage: 13.8 DC nominal. Current Drain: receiver 600mA, transmitter 1.5A max. Sensitivity: 0.5uV (20db SINAD). Audio Output: 3W max. Dimensions: 155 x 53 x 189 mm (W.H.D.)

Cat D 1766

$349

Uniden

UH-088 Scanning Mobile PRS Radio



This mobile PRS Radio provides fast channel scanning in a convenient DIN size that is easier to install in today's modern cars. It supports repeater operation, Open and Group scanning, push-button channel selection, and provides memory back-up for up to 2 weeks in case the DC power is disconnected. Together with the large backlit LCD screen and buttons plus the front-fire speaker of the UH-100 model listed below. The UH-088 also provides Channel Seek (where the receiver will continue scanning after stopping for 4 seconds on an active channel). No license required. RFS approved.

Specifications:

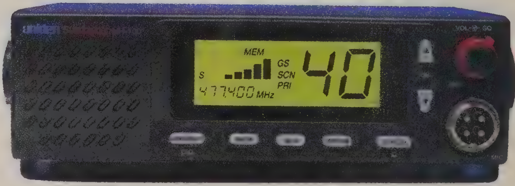
Frequency Range: 476.425 to 477.400MHz (40 channels). Carrier power: 5W max. Voltage: 13.8V DC nominal. Current drain: receiver 550mA max, transmitter 1.5A max. Sensitivity: 0.23uV (12dB SINAD). Audio output: 3W max. Dimensions: 173 x 52 x 145mm (W.H.D.).

Cat D 1785

$399

Uniden

UH-100 Deluxe Mobile PRS Radio



A great new addition to the Uniden range, the UH-100 not only provides voice scrambling for improved privacy during simplex (non-repeater) operation, but also provides scanning facilities (Open and Group scanning) as well as an advanced programmable selective calling system with 10 memories for commonly called stations. Other features include a front-fire speaker for clearer audio, a large LCD screen with adjustable backlighting to account for different ambient light levels, individual and group calling facilities, plus Tone Squelch scanning. Complete with mobile mounting hardware, quality microphone with Call button, and DC power lead. RFS approved, no license required.

Specifications:

Frequency Range: 476.425 to 477.400MHz (40 channels). Carrier Power: 5W max. Voltage: 13.8 DC nominal. Current Drain: receiver 550mA max, transmitter 1.5A max. Sensitivity: 0.23uV (12dB SINAD). Audio Output: 3W max. Dimensions: 173 x 52 x 145mm (W.H.D.)

Cat D 1788

Special Customer Order Only

$449

Uniden

UH-045 'PocketMax' PRS Radio

Covers 19 PRS channels with 38 CTCSS privacy codes. Operates on 4 x AAA batteries for convenience, with a 400mW power output. Has a multifunction backlit LCD display, external microphone/speaker jack and is supplied with belt clip, wrist strap and batteries. With no license required its ideal communication for contractors, schools, even coordinators, theatre groups etc.

Cat D 1752

$249

Uniden

UH-053

Covers the first 16 channels of the UHF band. Selectable repeater operation on channels 1-8. Simplex operation on all 16 channels if repeater access is not required. Compact 150 x 41 x 63mm case. 1 watt RF output. No licence required. Supplied with high capacity NiCad battery pack, AC charger, belt-clip and flexible antenna.

Cat D 1753

$299

Uniden

UH-054 Waterproof PRS

Full 40 channel coverage, and repeater access facilities. Uses rubber gasket seals, sealed pushbutton controls, a large top-panel mounted LCD screen and a contoured plastic case. Includes a sealed Nicad battery pack, flexible rubberised antenna, rugged spring-loaded belt clip, desk charging stand, carry strap and an overnight AC adaptor charger. Waterproof up to a depth of one foot for 30 minutes. Water impact resistance of 72kph(max). Measures 122 x 63 x 32mm.

Cat D 1754

$399

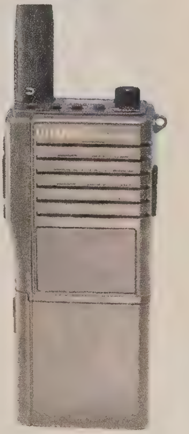
Uniden

UH-056 Scanning

Has a 700mA/h NiCad pack, belt clip, AC charger and flexible antenna. Compact size (68 x 37 x 150). Switchable 1W/5W max output. Full 40-channel UHF coverage. Simplex/ duplex operation. Backlit LCD display. Programmable channel scanning. Battery-free memory back-up. Auto-squelch system. No licence required.

Cat D 1756

$499



Accessories

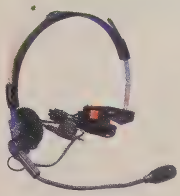
Compact Speaker/ Microphone

Provides greater flexibility in mobile or handheld applications, combining speaker and microphone in one slim unit, allowing the transceiver to be clipped to a belt or carried in a pocket. Features easy-to-use push-to-talk button. For use with UH-053, UH-056 and UH-057 handheld PRS.

Cat D 2025

$74 95

Headset Microphone

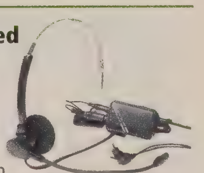


A lightweight headset compatible with Uniden UH-053, UH-056, UH-057 handheld CBs, allowing for more convenient operation in noisy areas. Headset features a convenient push-to-talk switch.

Cat D 2023

$99

Voice Activated Headset Microphone



A lightweight Japanese voice-activated (VOX) headset works with the UH-053 only, providing handsfree transmit operation in quiet areas when you speak. Includes adjustable VOX delay time, manual PTT operation, and foldable headset band. Operates on two watch batteries (supplied).

Cat D 2027

$115

High capacity battery 850mA/H UH053	Cat D 1825	**$74.50**
700mA/H NiCad Battery UH056, UH057	Cat D 1815	**$139.95**
1100mmA/H NiCad Battery UH056, UH057	Cat D 1816	**$195**
Desktop slow charger UH053	Cat D 1811	**$119.95**
Fast desktop charger UH056, UH057	Cat D 1817	**$245**
Leathercase for UH053	Cat D 1820	**$59.95**
Leathercase for UH056/UH057	Cat D 1819	**$74.95**

PRS Antennae

1/4 Wave Mobile Antenna

MOBILE ONE

An ultra-flexible 1/4 wave PRS antenna made from tough stainless steel wire in a protective plastic sheath. Install it on any standard 5/16" UHF antenna base. Approx. 135mm long.
Cat D 4008

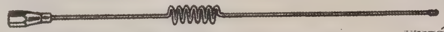
$12.95

4.5dB Fibreglass Antenna

MOBILE ONE

This 5/8 over 1/4 wave colinear antenna uses copper braid over a fibreglass rod to provide outstanding performance out of just 60cm of antenna. Fits any standard 5/16" UHF antenna base.
Cat D 4013

$24.95



4.5dB Stainless-Steel Whip Antenna

MOBILE ONE

A state-of-the-art stainless-steel whip antenna with a low angle-pattern and at least 4.5dB gain. All components are made of brass and stainless-steel for total protection against the elements, making it ideal for farming, industrial and heavy transport applications. Standard 5/16" female termination.
Cat D 4006

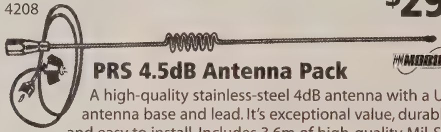
$24.95

PRS 1/2 Wave Hand-Held Antenna

MOBILE ONE

A superb half-wave antenna (3dB gain) which is ideal for hand-held PRS transceivers. It's just 26cm tall, highly flexible and has a quality BNC connector for clip-on, clip-off convenience. Also suitable for use with scanning receivers.
Cat D 4208

$29.95

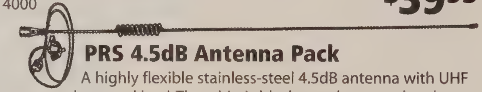


PRS 4.5dB Antenna Pack

MOBILE ONE

A high-quality stainless-steel 4dB antenna with a UHF antenna base and lead. It's exceptional value, durable and easy to install. Includes 3.6m of high-quality Mil-Spec Coax, fitted with a PL-259 plug and comes with instructions.
Cat D 4000

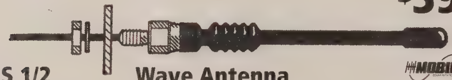
$39.95



PRS 4.5dB Antenna Pack

A highly flexible stainless-steel 4.5dB antenna with UHF base and lead. The whip is black powder coated and uses 2 hex screws to secure it firmly into its ferrule. Includes 3.6m of Mil-Spec Coax fitted with a PL-259 plug. Comes with Allen key and instructions.
Cat D 4002

$39.95

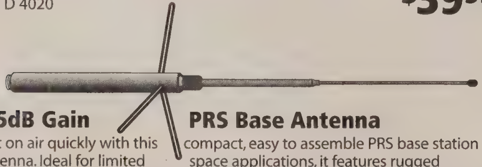


PRS 1/2 Wave Antenna

MOBILE ONE

A compact, unity-gain antenna that stands only 36cm high. Because it's ground-independent, you can mount it almost anywhere on your vehicle and get a clean, omni-directional transmission pattern. Ideal for vehicles and boats with fibreglass roofs. Chromed brass and flexible PVC construction with a 3.6 metre coax lead and PL-259 plug.
Cat D 4020

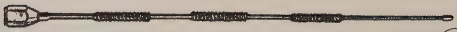
$39.95



4.5dB Gain PRS Base Antenna

Get on air quickly with this compact, easy to assemble PRS base station antenna. Ideal for limited space applications, it features rugged aluminium construction, and provides 4.5dB gain for medium to long range communications. A standard SO-239 socket is built into the bottom of the antenna for easy coax connection. Supplied complete with ground-plane radials for clean radiation pattern, as well as U-bolt mounting hardware.
Cat D 3010

$54.95



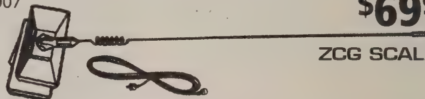
6dB Gain "Mega Blaster" Antenna

MOBILE ONE

Get high performance and maximum range from your UHF Personal Radio with the "Mega Blaster" antenna. It stands just 1.2 metres high and the multi-element, colinear design gives a solid 6dB gain. Mount it on your vehicle roof with a standard UHF base (D 4516) for best results. Can also be used as a scanning receiver antenna.
Cat D 4007

$69.95

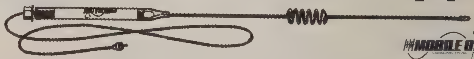
ZCG SCALAR



UHF Glass-Mount Antenna Pack

A high quality glass mounted antenna which looks similar to those used for cellular phones. It's easy to install and doesn't require drilling. Can be mounted on the windscreen or rear window. Frequency range is 390-520 MHz, making it ideal for PRS, Amateur or UHF commercial users. It has an average power rating of 100 watts, and comes with 4.5m coax cable and a PL-259 plug.
Cat D 4019

$74.95

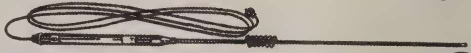


MOBILE ONE

6.5dB Rugged Elevated Feed Antenna

Ideal for applications such as 4WD, heavy transport, mining or industrial uses, thick rugged antenna uses a 3.2mm diameter stainless-steel whip which will remain vertical at high vehicle speeds for optimum performance. Each antenna is pre-tuned for 465-485MHz operation, providing a low angle of radiation and minimum 5dB gain for longer range. Comes with 3.6m of coax cable and PL-259 plug.
Cat D 4028

$79.95



6.5dB Elevated Feed Mobile Antenna

RFI

This tough, elevated-feed, ground-independent UHF mobile antenna can be used in virtually any mounting position (provides up to 6.5dB gain when gutter mounted). It uses a stainless-steel whip with a black Dura-Coat finish and triple chrome-plated brass elevated feed choke. Comes with 3.6m of coax and PL-259 plug. Adjustable over the 470-490MHz range.
Cat D 4023

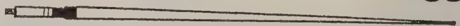
$89.95

6dB Gain Base Antenna

MOBILE ONE

Get great range from your UHF with this high-gain (6dB), 2.4m high, omni-directional base-station antenna. The high quality fibreglass radome and aluminium tubing construction will ensure a long life. It's fitted with an N-type socket for minimum signal loss and it's great value!
Cat D 4011

$89.95



9dB Gain Base Antenna

ZCG SCALAR

One of our best omni-directional PRS base antennas, it has a high 9dBi gain for improved range, together with rugged aluminium-tube base and fibreglass radome construction for long life. At 3.0 metres tall, it uses a ground-independent design and has an 'N' type coax socket for minimum signal loss.
Cat D 3005

$145

12dB Gain Base Antenna

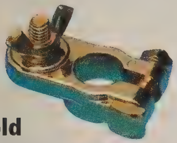
ZCG SCALAR

Our highest performance omni-directional antenna, its 12dBi gain makes it ideal for installations where maximum range is required. A heavy duty 32mm diameter support tube and fibreglass randome construction allow this ground-independent antenna to be used in rural, industrial or marine areas. Its 3.8m tall, and uses an 'N' type coax socket for minimal signal loss.
Cat D 3008

$159

Gold DC Power Connectors

When you're really serious about a quality DC power installation for high-end vehicle or marine sound systems, solar power wiring, or high-power transceivers, our cost-effective gold-plated hardware & low-loss OFC power cables will help give a professional result. Gold-plated hardware minimises contact resistance, reduces chances of corrosion, and maintains the appearance of your system. Our OFC DC power cables (p.224) use fine copper strands & quality PVC insulation to ensure flexibility for easier installation in tight spaces as well as greater vibration resistance.

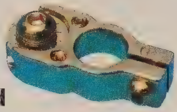


Gold Battery Terminals

Gold-plated vehicle battery terminals with 7mm thread butterfly-nut & recessed bolt head for quick connection of DC cables with fitted lugs.

Positive Terminal Cat D 6100
Negative Terminal Cat D 6102

$12.95ea



Gold Battery Terminals

Gold-plated battery terminals with a hex head screw for connection of heavy DC cables with lugs fitted, as well as recessed direct inlets for two 8GA cables.

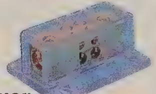
Positive Terminal Cat D 6104
Negative Terminal Cat D 6106

$12.95ea

Gold Power Lugs

Large gold-plated "lugs" for fitting to a thick DC power cable to allow connection to a battery terminal. Uses large Allen screw to securely grip the cable.

Suits 8GA cable
Cat D 6112 **$8.95**
Suits 4GA cable
Cat D 6114 **$9.95**



Power Distribution Block

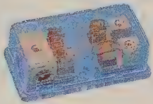
Gold-plated heavy-duty distribution block for feeding DC to a number of devices. Has large 4GA inlet and outlet, plus four smaller 8GA outlets. Includes mounting plate and clear plastic cover. Size is 68 x 52 x 34mm (LWH) including plate and cover.
Cat D 6120

$12.95

Gold In-Line Fuseholder

Heavy-duty 5AG fuseholder with low resistance gold-plated contacts and dual gasket seals for the fuse area. Suits both 8GA and 4GA cables, and has inbuilt mounting bracket for easy installation.
Cat D 6118

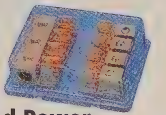
$12.95



Fused Power Distribution Block

Gold-plated heavy-duty power distribution block with three 4GA inputs and two 8GA fused outlets. Fuseholders use 5AG size fuses (not supplied). Size is 101 x 53 x 33mm (LWH) including plate and cover.
Cat D 6122

$24.95



Fused Power Distribution Block

Gold-plated heavy-duty power distribution block with three 4GA inputs and four 8GA fused outlets. Fuseholders use 5AG size fuses (not supplied). Size is 104 x 77 x 33mm (LWH) including plate and cover.
Cat D 6124

$34.95

5AG Gold Fuses

Pack of 2 5AG size DC fuses with gold-plated end caps for lower contact resistance. Available in a range of current ratings.

20A fuses	Cat D 6132
30A fuses	Cat D 6134
40A fuses	Cat D 6136
50A fuses	Cat D 6137
60A fuses	Cat D 6138

$4.50pk

Power Supplies & Filters

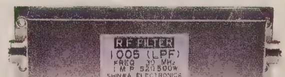
3-15V 6 Amp DC Power Supply

NEW FOR '99

Regulated DC power supply covers the 3-15V range and can provide current up to 6A continuous at 15V (lower current at lower voltages). Features voltage and current metering, internal heatsink and thermally-switched cooling fan, high and low current front panel DC output terminals and a strong metal case. Extensive overload protection and circuitry.
Cat D 3806

$189

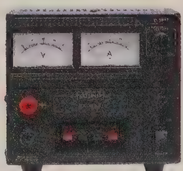
Transmitter Low-Pass Filter



Helps reduce TV interference caused by HF transmitters. Ideal for CBers and amateurs, it handles up to 500W PEP. Cut-off is around 30MHz with a maximum attenuation of approximately 50dB at 100MHz and insertion loss of only 0.7dB.
Cat D 7080

$59

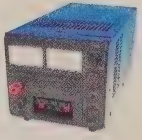
3-15V 13 Amp DC Power Supply



This low-noise regulated DC power output ranges from 3-15V and current is up to 13 amps continuous at 15V (lower current at lower voltages). With front panel metering, high current banana-style and low-current output connections for extra flexibility. An internal heatsink and thermally-switched fan provides cooling without protrusions in the metal case (measuring 320 x 150 x 145mm). It has extensive overload protection through dissipation limiting circuitry for the pass transistors. AC mains circuit breaker, and a transformer thermal fuse.
Cat D 3812

$249

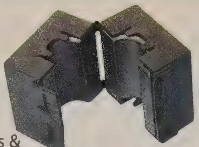
3-15V 25Amp DC Power Supply



Similar to the 13 amp DC power supply, this is more powerful with current up to 25 amps ICAS at 15V. It also has front panel metering plus high current banana-style and low-current output connections for extra flexibility. An internal heatsink and thermally-switched fan provides cooling without protrusions in the metal case (also measuring 320 x 150 x 145mm). Specially modified for more reliable long-term operation. Also provided is extensive overload protection through dissipation limiting circuitry, a 30 amp instantaneous current limit, AC mains circuit breaker, a transformer thermal fuse and fused auxiliary secondary winding.
Cat D 3800

$349

Clamp-On Ferrite Suppressors



Suppresses HF-VHF RF interference in cables where it's not practical to cut the cable to insert a filter. Reduces noise radiated by computer leads, and for suppressing interference to phone cables & TVs from near-by transmitters. Just clamp over cable & suppressor acts as an RF choke. The more turns of the cable through the suppressor, the higher the series impedance to RF interference. Comes in 2 sizes with locking nylon housing. #43 ferrite material.

For cables up to 6mm diameter	Cat D 5370	$9.95
For cables up to 13mm diameter	Cat D 5375	$14.95

Universal Dynamic Mic

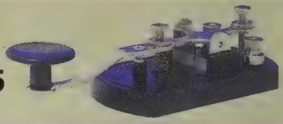
Designed for AM and SSB transceivers, this quality Japanese mic is supplied with a four-core lead and 4-pin plug that can be wired to suit most transceivers, even those with electronic switching. Nominal 600 ohms impedance.
Cat D 2000 **$34.95**

Noise Cancelling Mic

This quality Japanese mic uses two out-of-phase inserts to achieve its noise-cancelling ability. It has a quality PTT switch and coiled lead making it ideal for amateur or CB use. Impedance is 250-600 ohms and frequency response is 300-5000Hz.
Cat D 2010 **$44.95**

Economy Morse Key

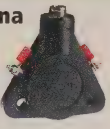
A bargain-priced morse key that's ideal for practicing or learning Morse Code. It's a great companion to our Morse Code Oscillator project found in the Funway series.
Cat D 7105 **$12.95**



Toroidal Balun Kit

This kit contains a 50mm iron-powder toroid, heavy-gauge insulated winding wire and instructions. In a 1:1 52-ohm configuration, it can handle up to 2kW PEP with minimal insertion loss. Use it for antennas up to 30MHz, or RFI suppression on your hi-fi gear by wrapping as many turns of your speaker leads as will fit through the core.
Cat D 5350 **$24.95**

1kW HF Antenna Balun

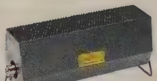


Use as a centre support for dipole or yagi antennas. This 'T' shaped 1:1 balun has 52-ohm unbalanced input and 52-ohm balanced output. An SO-239 socket is mounted into the base of the balun for easy coax connection, RF input power handling is 1kW P.E.P. max and insertion loss is less than 1db. It can handle the entire HF band - 3 to 30MHz. RAK model BL-50A.
Cat D 5310 **$79.95**

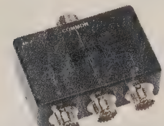
15-Watt Dummy Load

A coax terminator with superb SWR characteristics. It consists of a heat-resisting ceramic resistor surrounded by an anodised aluminium heatsink, providing less than 1.2:1 SWR DC to 500MHz. It's fitted with a PL-259 plug, has an impedance of 50 ohms and it can handle 15W continuous or 100W for up to 30 seconds.
Cat D 7025 **$59.95**

250-Watt Dummy Load



Ideal for testing high power transceivers and amplifiers, the Revex L250N 50 ohm dummy load is rated at 250W (50% duty cycle) and 1kW peak power. Its internal construction and low-loss N-type socket allow it to be used over the DC-500MHz range with very low SWR. Includes desk stands for more efficient convection cooling.
Cat D 7028 **$229**



3 Position Coax Switch

For more than one antenna or CB, an easy-to-use slide switch makes antenna selection convenient. Handles up to 50W at 30MHz.
Cat D 5206 **$27.50**

2-Way Coax Switch

A heavy-duty, 2-way coax switch that's suitable for Amateur, CB or commercial applications. It has a diecast case and can handle up to 2KW P.E.P. or 1kW CW at 30MHz with less than 0.2dB insertion loss.
Cat D 5200 **$49.95**

S20
COAXIAL SWITCH
REVEX

Quality 2-Way Coax Switch

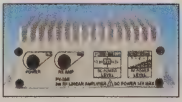
2 way 50 ohm coax switch suitable for HF and VHF applications. Has self-cleaning contact mechanism for trouble-free operation.
Cat D 5208 **$89.95**

2-Way N-Type Coax Switch

The Revex S20N is a 50-ohm N-type coax switch designed for exacting use on frequencies up to 1500MHz. Has an insertion loss of less than 0.1dB at 1500MHz and uses a self-cleaning contact mechanism to ensure trouble-free operation. Max. power rating is 1kW PEP.
Cat D 5202

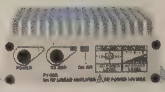
Customer Order Only **$129.95**

2m 30W RF Power Amplifier



Works with inputs from 0.5 to 5W, and produces up to 30W output with just 3W input, and with just 1 W input it will provide around 15W output. A switchable 12dB gain low-noise GaAs FET receiver pre-amplifier can be selected to provide improved performance. The amplifier includes large heatsink, fused DC power lead, SO-239 input/output connectors and simple LED metering. Frequency range 144-148MHz only. Requires 13.8V DC at 6A max. Size: 125 x 48 x 174mm (WHD) including protrusions.
Cat D 2515 **$139**

2m 80W RF Power Amplifier



Designed to use with 2m hand-helds. Works with RF levels of 0.5 to 5W, provides 80W output with typically just 2.5W input, and 1 W input will provide over 40W output. Switchable 12dB gain GaAs FET receiver pre-amp can be selected for improved performance. Includes a large die-cast heatsink, fused DC power lead, SO-239 input/output connectors and simple LED metering for DC supply voltage and relative RF output power. Frequency range 144-148MHz only. Requires 13.8V DC at 20A max. Size: 124 x 44 x 208mm (WHD) including protrusions.
Cat D 2520 **$249**

SWR Meters

HF Power/SWR Meter

Ideal for general HF band use by Amateur, CB or Commercial operators, the Revex W200 covers the entire 3-30MHz range and will measure with as little as 2W input at 30MHz. Provides 3 power ranges (20, 200, 2kW), and measures 60 x 165 x 100mm. Uses standard SO-239 sockets.
Cat D 1355

$89

HF/6m Power/ SWR Meter

For high power operation over the 1.8-60MHz range, this Japanese-made Revex W500 provides a large, clear meter for ease of reading. Enclosed in an all-metal case for long-term durability, the meter has power ranges of 20W, 200W and 2kW with less than 0.1dB loss, as well as SWR measurement.
Cat D 1365
Customer Order Only

$179

VHF/ UHF Power/SWR Meter

An SWR/power meter to suit Amateur, PRS and Commercial applications. Japanese construction with an all-metal case, large meter display, 140-525MHz coverage with less than 0.3dB insertion loss, and 4W, 20W & 200W power scales. Revex model W540.
Cat D 1370

$249

Revex W560N HF/VHF/ UHF SWR/PWR Meter

Revex wide-band SWR meter, offering 2 inbuilt sensors for 1.8MHz to 535MHz coverage, 3 power levels (3W, 20W, 200W) and SWR. Uses an N-type socket for the VHF/UHF sensor to ensure minimal loss. Measures 120 x 80 x 85mm.
Cat D-1375

$349

Revex W570 HF/VHF/UHF SWR/PWR Meter

Top of the line performance! The W570 provides switchable 1.6-160, 400-525, 700-1100, and 1240-1300MHz coverage, with measurement of 3 power levels (5, 20, 200W) and SWR. The external UHF sensor uses N-type sockets for minimal loss, and can be mounted remotely for easier cable connection to the meter. Measures 120 x 80 x 155 (including protrusions).
Cat D 1377

$399

Amateur Antenna

70cm Colinear Mobile

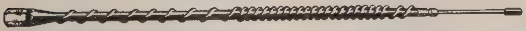
This mobile whip antenna provides 4dB gain across the 430-440MHz range and may be cut for higher frequency operation. Comes with standard 5/16 thread to suit most UHF bases.
5 YEAR WARRANTY
Cat D 4030

$29⁹⁵

2m 5/8 Wave Mobile

At 1.34 metres in length, this is an ideal choice for all 2 metre users. This very flexible mobile antenna has a long-life heat-shrink covering and provides approximately 3dB gain. Comes with a standard 5/16″ female-threaded socket attached.
5 YEAR WARRANTY
Cat D 4207

$29⁹⁵



HF Antenna Systems

A range of helical HF amateur mobile antennas designed for New Zealand conditions. Simply install a base and attach the whip according to the band you require. Each whip is approximately 1.6m long, appropriately loaded, and features adjustable tuning. Maximum power handling is 200 watts. (Recommended base: 5/16″ heavy duty. Cat D 4313)

10m Band	Cat D 4316	15m Band	Cat D 4314
20m Band	Cat D 4312	40m Band	Cat D 4311
80m Band	Cat D 4310		

5 YEAR WARRANTY

$69⁹⁵ea

'Rubber Duckie' 2m Handheld Antenna

This classic antenna is just 20cm long with a fast action BNC connector for attaching to your handheld. Robust, yet very flexible, and has a reinforced base for extra strength and reliability. Covers 144-148MHz. **5 YEAR WARRANTY**
Cat D 4330

$34⁹⁵

2m/70cm Dual Band Handheld Antenna

This dual band 2m (1/4 wave) and 70cm (5/8 wave) antenna is very flexible and performs better than most standard antennas on handhelds. Featuring a frequency coverage of 144-148MHz (unity gain) and 430-440MHz (3.2dB gain), it is just 440mm long, weighs only 50g and also works well with scanner receivers.
Cat D 4334

$39⁹⁵

2m Telescopic 5/8 Wave Handheld

This 144MHz antenna stands just 22cm tall in its retracted 1/4 wave position, and can be extended to a full 132cm for excellent 5/8 wave operation. Made from durable stainless steel, it has a spring base to help protect it from rough handling, and a handheld BNC connector for attaching to your transceiver. Made in Japan.
Cat D 4333

$49⁹⁵

2m/70cm High Gain Handheld Antenna

The Diamond RH770 is a high gain telescopic dual band antenna for use with handheld transceivers when maximum range is required. Provides approximately 3dB gain on 2m and 5.5dB gain on 70cm and weighs just 85 grams. Collapses from 93cm to 23cm for easy storage. Uses standard BNC connector to attach to your transceiver.
Cat D 4336

$129

High Performance VHF/UHF Base Station Antennas

Diamond base station antennas offer outstanding quality and exceptional value. These stacked collinear types provide high gain, wide bandwidth and a low radiation angle for extended range. The fibreglass reinforced polyester outer radome and gasket seals provide excellent all-weather operation and compact ground-plane radials are supplied. Stainless-steel mounting hardware ensures a long, trouble-free life. Supplied with instruction sheets for easy set-up.

2m Antenna F-23A

Frequency: 144-148MHz
Gain: 7.8dB
Max. Power: 200W
Length: 4.53m
Max wind 40m/s
Type: 3 x 5/81
Connector: SO-239 socket
Cat D 4850

Customer order only

$269

2m/70cm X-200A

Frequency: 144-148MHz
430-450MHz
Gain: 6dB on 2m,
8dB on 70cm
Max. Power: 200W
Length: 2.5m
Max wind 50m/s
Type: 2 x 5/81 (2m)
4 x 5/81 (70cm)
Connector: SO-239 socket
Cat D 4860

Customer order only

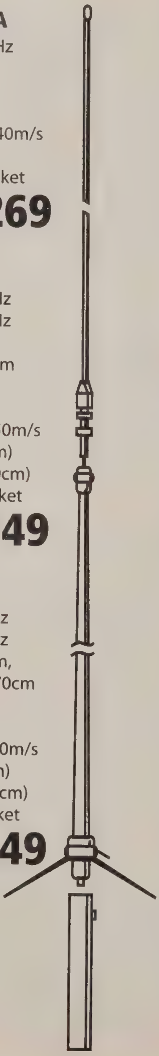
$249

2m/70cm X-510A

Frequency: 144-148MHz
433-450MHz
Gain: 8.3dB on 2m,
11.7dB on 70cm
Max. Power: 200W
Length: 5.2m
Max wind 40m/s
Type: 3 x 5/81 (2m)
8 x 5/81 (70cm)
Connector: SO-239 socket
Cat D 4837

Customer order only

$349



2m 1/2 Wave Base Station Antenna

An Australian-made base station antenna that's 1.69m long and has a single section fibreglass reinforced polyester 9FRP) radome for excellent all-weather operation. Covers 144-148MHz range (<1.5:5 SWR) with a maximum power handling of 200W FM. Provides approximately 3dB gain. Fitted with a SO-239 socket mounted into the base.

Cat D 4820

5 YEAR WARRANTY

$74.95

2m Heavy Duty Base Station Antenna

For use where long-range omni-directional 2m band (144-148MHz) coverage is required. This 3.4m long 1/2 wave over 1/2 wave colinear vertical antenna provides approx 5dB gain and is housed in a very tough single-section fibreglass radome for all-weather protection. The strong aluminium base section is fitted with an N-type socket in its base for coax cable connection.

Cat D 4822

5 YEAR WARRANTY

$149

6m 1/2 Wave Base Antenna

A rugged Australian-made vertical antenna designed to cover the 51 to 54MHz range, with minimum SWR around 53MHz. Built using high tensile TB1 grade aluminium, it's just 2.9m long with a sealed base section and 100W minimum power rating. Complete with mounting hardware.

Cat D 4825

Customer order only

$79.95

D-130J Discone Antenna

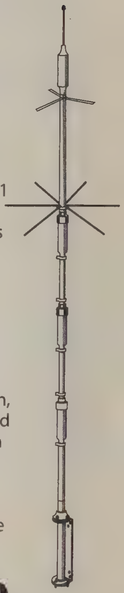
Covers the frequency range 25-1300MHz and comes with mast-mounting hardware and instructions. Easy to assemble and install with extensive stainless-steel construction making it extremely durable. A wide frequency coverage means that it's ideal for scanning receivers, as well as transmitters up to 200W PEP for the 6m, 2m, 70cm and 23cm amateur bands. Uses SO-239 coax socket for easy coax connection.

Cat D 4840

5 YEAR WARRANTY

$199

Rugged HF 5-Band Trap Vertical Antenna



The rugged 5BTV incorporates Hustler's exclusive trap design (25mm solid fibreglass formers, high tolerance trap covers and low loss windings) for accurate trap resonance with 1kW PEP power handling. Wide-band coverage is provided on the 10, 15, 20 and 40 bands (SWR typically 1.15:1 at resonance, < 2:1 SWR at band edges) with 80kHz bandwidth typical on 80m at less than 2:1 SWR. An optional 30m resonator kit can be installed without affecting operation of other bands. High strength aluminium and a 4mm (wall thickness) extra heavy-duty base section guarantee optimum mechanical stability. At just 7.65m, the 5BTV can be ground mounted (with or without radials, although radials are recommended), or it can be mounted in an elevated position with a radial system. Unlike other antenna designs, the 5BTV can be fed with any length of 50-ohm coax cable.

Cat D 4920

$469

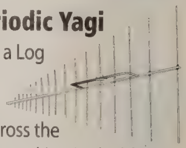
30m Resonator Kit

Adds 30m coverage to the 5BTV, and includes all hardware.

Cat D 4921

$129

LP-1300 Log Periodic Yagi



The Maldol LP-1300 is a Log Periodic Yagi beam antenna designed to provide useful gain across the 100 to 1300MHz range, making it ideal for scanner enthusiasts and ham operators who need a directional wide-band antenna. The LP-1300 consists of a 17 element Yagi with a special feed system that provides low SWR (less than 2.0:1) across the 100-1300MHz range, and can handle up to 500W FM when used for transmitting.

Gain: 6.0dBi to 10.0dBi (depending on frequency)
Boom Length: 1.46m
Longest element: 1.35m
Weight: 2.3kg
Suitable mast: 28-60mm diameter (not supplied)
Max wind speed: 40m/sec
Connector: SO-239
Cat D 4828

$289

2 Zone Security Alarm System

This two zone keypad operated alarm allows programmable entry/exit delays and is ideal for houses and flats. LED indicators show whether the alarm is armed and the 3 wire alarm cable provides for easy installation. Comes with control panel, low profile siren, mains adaptor, internal PIR sensor, hardwired door contacts and 30 metres of alarm cable.

Features

• Backlit, keypad operated control panel • Programmable 4-digit security code • Programmable entry/exit, chime zone and siren time • Low profile external siren and warning LED • Zone indication LEDs • Fully illustrated installation and operation guide • 8 metre range miniature PIR motion detector

Cat L 5180

$169

Affordable Home Security

Security is yours with this affordable system. It covers the average home and can be easily upgraded to suit your future requirements. Activated by an easy-to-operate single key, it includes two passive infrared sensors (PIR) for area surveillance, five pairs of magnetic switches for use on doors and windows, plus a panic button that trips the alarm instantly, an external horn siren and plug-in power supply. You can install it yourself using the easy-to-follow, step-by-step instructions supplied.

Features

• High-quality 3-sector alarm panel • Easy-to-use 1-key activation • Panic button and mains power adaptor • 50-metre 4-core alarm cable • 5 pairs of magnetic switches for windows and doors • 2 passive infrared area sensors • Comprehensive, step-by-step installation instructions

Cat L 5169

$269

Deluxe Home Security System

All the features of the L 5169 system plus much more. It uses a four-digit code to control the system, so don't have to carry a key. Its control panel has four user-selectable sectors, allowing you to disable the alarm in any area of your home while leaving the other sectors armed. It includes two passive infrared sensors (PIR) for area surveillance, five pairs of magnetic switches for use on doors and windows, plus a panic button that trips the alarm instantly, an external horn siren and plug in power supply.

Features

• 2 passive infrared area sensors • Mains power adaptor • Comprehensive, step-by-step instructions • 50m 4-core alarm cable • 5 magnetic (reed) switches for windows and doors • Emergency "panic" button • Top-quality controller with 4 independently activated sectors

Cat L 5149

$399

Multi-Purpose Alarm

Protect your shed, boat, garage or caravan. This alarm uses a simple reed switch, is key operated and has entry/exit delay times. Includes a loud piezo siren. Easy to install. Powered by 1 x 9V battery.

Cat L 5179

$49.95

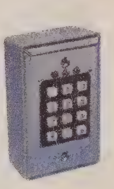
micromark
SECURITY Systems
INTRUDER ALARM
/GARAG... ...AVAN ALARM

Digital Access Keypad

Dual output digital access control keypad designed for door strike and security alarm systems. Over 100 million combinations are possible for the user codes and master code. Comes with a mounting block and is fitted with a tamper switch for added security. This digital access keypad is programmable to suit all your requirements. Designed for easy installation, can be fixed to a wall and runs off 12V DC.

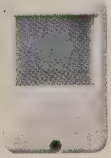
Cat L 5288

Suitable for L 5149 Alarm Package



$79.95

PIRs

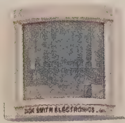


Micromark PIR

Used as an additional PIR detector for the L 5180 2 zone micromark alarm system. Range 12m through 90°, with visual LED alarm indicator, size: 60 x 40 x 24mm.

Cat L 5024

$34.95



Mini PIR Detector

Adjustable range up to 12m through 95°. Mount on any flat surface or corner.

Cat L 5011

$49.95

Mini PIR Detector

12x12m @ 90° range. Single-shot or pulse count selectable. With dual element pyro-electric sensor, radio frequency interference filter.

Cat L 5018

$59.95

Ness 10 + PIR Detector

15x30m long range. Features 20 dual element zones plus creep zone and high RF immunity.

Cat L 5021

$69.95

Intruder PIR Alarm with Keypad

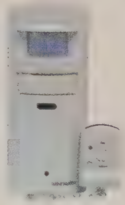
Designed for easy do-it-yourself installation. Movement automatically triggers this reliable alarm, sounding an ultra-loud 130dB siren. Monitors a 7m range in 60° arc. Features easy to program 4-digit personal code, automatic reset, 30 second exit delay, 10 second entry delay and a low battery indicator. Requires 4 x AA batteries (not supplied).
Cat L 5061

$49.95

Mini PIR Alarm with Remote Control

Movement automatically triggers this reliable alarm, sounding an ultra-loud 130dB siren. Monitors a 7m range in 60° arc. Features infra-red remote control, automatic reset, 30 second exit delay, 10 second entry delay and a low battery indicator. Requires 4 x AA batteries (not supplied).
Cat L 5062

$64.95



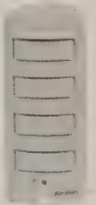
Additional Accessories

Remote control to suit mini PIR alarm	Cat L5063	**$19.95**

External 130dB Siren

An optional external siren that simply plugs into the L 5061 Intruder Alarm or the L 5062 Mini PIR Alarm. Supplied with 10m of cable. Features an anti-tamper device that will instantly sound the siren if the lead to the main unit is broken. High output 130dB siren and a low battery indicator. Requires 4 x AA batteries (not supplied).
Cat L 5064

$29.95

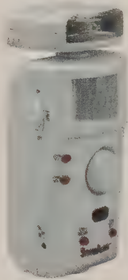


NEW FOR '99

Strobe Alarm MK2

Great for home, office or garage, designed for indoor use. Features a sensor that detects any intruder. It includes a powerful flashing strobe light, loud 130dB siren, remote control, adjustable bracket and warning sticker. Requires 1 x 9V and 4 x AA batteries (not supplied) or a DC power adaptor.
Cat L 5033

$89



NEW FOR '99

Air Block Alarm System

The Air Block security alarm system is totally portable and therefore completely versatile and affordable for apartments, homes, office and warehouse operations. It has the added advantage of being utilised in cars, boats and caravans. The Air Block is operated by a simple 1-key system and is a volumetric alarm working on air pressure changes. Protects an area from 2-500m². Requires 6 x AA batteries (not supplied).
Cat L 5740

$299

Entry Alarm with Keypad

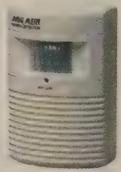
It has a user-programmable security code, programmable entry and exit delay time, reliable detection, built-in piezo siren at 110dB and ultra-low battery consumption. The alarm will sound once windows and doors are opened. 3 x AA batteries required (not supplied).
Cat L 5067

$39.95

PIR Mini Alert Alarm/Chime

Operates as an alarm or chime. It monitors an 8m range in an 80° arc and comes with a wall mounting bracket. 3 x AA batteries required (not supplied).
Cat L 5045

$44.95



PIR Alarm and Visitor Chime

Reliable safety and convenience, DIY design, requires no wiring. Keypad access code control. Features a 10m range with an 89° detection angle, built-in powerful siren up to 120dB. Programmable PIN number. Choose between alarm and chime operation. Selectable exit, entry delay and alarm duration. Requires 3 x AA batteries (Not supplied) or a DC power adaptor.
Cat L 5030

$69.95

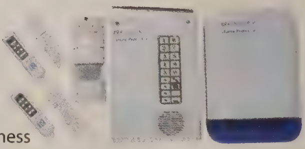
Strobe Alarm MK2 Complete Section

NEW FOR '99

Easy to install PIR motion sensor with strobe light and 120dB siren, glass breakage sensor and magnetic reed switch. RF transmitter to separate outdoor siren/strobe. Includes 2 remote controls. Features DC power socket.
Cat L 5032

$199

Home Protector Deluxe Wireless Alarm System



The Home Protector is ideal for use in an average sized family home and small business where high quality general protection is required. Includes control panel, 1 x PIR detector, 2 x magnetic reed switches, 2 x remote controls, external siren/strobe, battery back-up and a mains power adaptor.
Cat L 5715

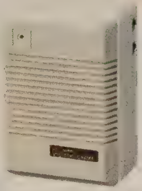
$499

Optional Add-On Accessories

Home Protector PIR Detector	L 5706	**$109.95**
Home Protector Door/Window Monitor	L 5707	**$59.95**
Home Protector Remote Control	L 5708	**$39.95**
Home Protector Keypad	L 5709	**$99.95**
Home Protector External Siren/Strobe	L 5711	**$149.95**

Door Security

Security Door Chime

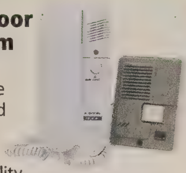


Ideal for use on shop doorways. Activates when someone walks past it. Range of around 5m. The door chime operates under normal indoor light conditions. Requires 2 x C batteries (not supplied).

Cat L 5043

$49.95

De Security Door Intercom System



Simple to install, this intercom uses a 2-wire system and is supplied with 10m of cable. Features optional door latch release facility and volume control for the chime. The unit requires either 4 x AA batteries or a DC power adaptor (not supplied).

Cat L 5808

$89.95

De Security Door Beam

Easy to install, it has an alarm/chime/off switch and adjustable time for siren and chime. Complete with door beam, siren chime unit, 10m cable, power adapter and mounting brackets. It has a 7m range.

Cat L 5900

$169

Smoke Alarms

HomeWay Smoke Alarm

Can be used in any room of the home or office. Easy to install and includes a battery and a 12 month warranty.

Cat L 6100

$12.95

ARLEC Smoke & Fire Alarm

For use in hallways, bedrooms and family rooms. Low battery warning signal LED indicates units is powered. Includes 9 volt battery.

Cat L 5199

$19.95

First Alert Smoke Alarm

Heavy duty 9 volt battery included. Hinged cover for easy battery replacement. Beeping signal warns when battery needs replacing. Test button checks all alarm functions.

Cat L 5216

$24.95

Sensor Lights

NEW FOR '99

ARLEC Single Head Security Light MAL571

Ideal for use in smaller areas where two globes would be too bright. Hardwired system comes complete with a 150w PAR 38 globe.

Cat L 5582

$29.95

ARLEC Security Flood Light

It uses an infra-red detector to detect movement, automatically switching the twin floodlights on when the surveillance field is broken. With a 15m x 120° sensor range and adjustable time control. Floodlight globes not included. Note: Must be installed by a licensed electrician.

Cat L 5536

$29.95

Also available:
PAR 38 Bulbs to suit: S 5129 **$9.95**

ARLEC DIY Security Light

Incredibly easy to install – no wiring – just plugs into any bayonet globe socket. Floodlight automatically turns on when you approach, and off when you leave. With adjustable range up to 15m and time settings up to 3 mins. Floodlight globes not included.

Cat L 5549

$44.95

Also available:
PAR 38 Bulbs to suit: S 5129 **$9.95**

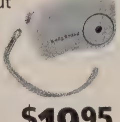
Personal Alarms

Novelty Personal Alarm + Keyring

Looks just like a novelty key ring. Available in 2 styles, Rabbit and Crocodiles. Requires an A23 12V alkaline battery (supplied).

Cat L 5182 **$16.95ea**

Bodyguard 3 Personal Alarm

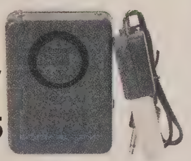


Slip the wrist-strap on and put bodyguard in your purse. If the cord is pulled the siren is triggered. Also has a handy keylight torch. Requires 2 x AAA batteries (not supplied).

Cat L 5154

$19.95

Personal Body Alarm



With pin pull activation. Features a loud siren, approx. 110dB. Requires 1 x (9V battery (not supplied).

Cat L 5177 **$16.95**

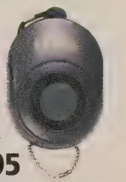
Key Alert Personal Alarm

Compact personal alarm with built-in flashlight, sturdy keyring and loud alarm. Requires an A23 12V battery (supplied).

Cat L 5178

$24.95

Big Shock Personal Alarm

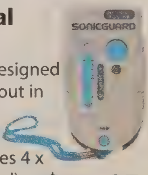


Attach in to your purse or briefcase. Simply pull the cord to sound an attention getting 110dB alarm. Requires 5 x LR44 batteries (supplied).

Cat L 5172

$19.95

Sonicguard Personal Alarm



Has built-in torch and is designed to blast the 135dB sound out in front of you where it is most effective. Also features a belt-clip. Requires 4 x AAA batteries (not included).

Cat L 5181

$24.95

Night Vision Equipment

See in the Dark

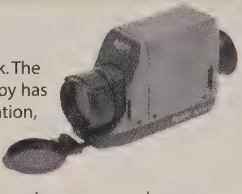
The Apple Night Viewers are optoelectronic devices designed for night viewing of wildlife, terrain and people. Ideal for farmers, security companies, home security, wildlife and bird watchers, astronomers, caving enthusiasts and particularly boat owners who need to find their mooring in the dark. Night vision is digitally enhanced viewing – when using the Night Viewers you are not actually viewing the scene before you but a video image of the scene.

Apple NightEagle

7000 x light amplification, 2.4 x magnification, weighs 800g. 40° field of view.
Comes complete with 9V battery and soft carry case. One year replacement warranty.
Cat L 8180

$329

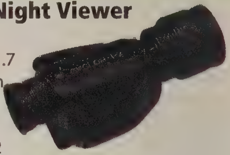
Apple Night Spy



See in the dark. The Apple Night Spy has 1.7x magnification, 7000x light amplification, built-in infra-red illuminator and carry case.
Cat L 8190

$389

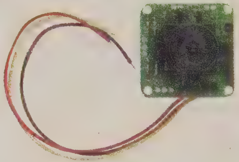
Cyclop P2 Night Viewer



7000 x light amplification. 1.7 x magnification, weighs 400g. 20° field of view. Cyclop P2 utilises high voltage piezoelectric crystals for powering the image intensifier tube. This avoids the use of batteries.
Cat L 8165

$499

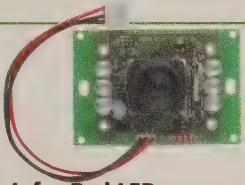
CCD Camera Modules



CMOS Camera Module (B&W)

Maximum illumination: 1 Lux at F1.4. Power source: 12V DC (20mA). Pixels: 352x288. Resolution (TV lines): 240. S/N ratio: >46dB. Lens: 3.6mm/F2.0. Size: 28mm x 28mm x 37mm.
Cat L 5874

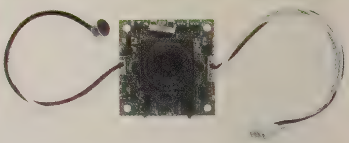
$89



CCIR Camera Module B&W With Infra-Red LEDs

Power source: 12V DC (160mA). 1 Lux Minimum Illumination. Pixels: 512x492. Resolution (TV lines): 380. S.N Ratio: >45dB. Lens: 3.6mm. Size: 40mm x 35mm.
Cat L 5872

$125



CCD Camera Module B&W With Audio

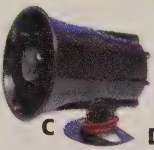
Features: Power Source: 12V DC (110mA). 1 Lux Minimum Illumination. Pixels: 510 x 492. Resolution (TV lines): 380. S/N Ratio: >45dB. Size: 32mm x 32mm.
Cat L 5873

$135

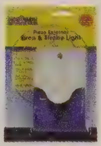
Security Accessories

A.

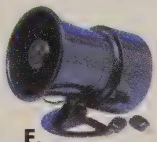
B



C



D.



E.

A. Siren Piezo Rainproof

7-14V DC (250mA). Frequency: 2.4-3.7 kHz. Output: 102dB.
Cat L 7037

$29.95

B. Siren 10.2cm (4") ABS

Sounds an ear-piercing 120dB siren. 12V DC (1.15A). Size: 102mm (dia.) x 113mm(l).
Cat L 7034

$29.95

C. 4" Horn Speaker

Features an 8 Watt output, 8 Ohm impedance and weighs only 450 Grams.
Cat L 7040

$29.95

D. Rainproof Siren & Strobe Light

7-14V DC (500mA). Frequency: 2-3.7 kHz. Output: 100dB.
Cat L 7038

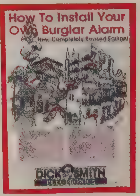
$44.95

E. Anti-Cut 12V Siren

12V DC (300mA). Output: 120dB. Battery back-up means that if the wires are cut, the siren will sound. Includes mounting bracket and manual override.
Cat L 7035

$59.95

How to Install Burglar Alarms

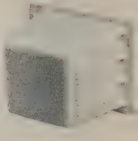


How To Install Your Own Burglar Alarm
New Completely Revised Edition
DICK SMITH ELECTRONICS

A new, completely revised edition! Includes clear diagrams and instructions to make securing your house a breeze.
Cat B 6012

$4.95

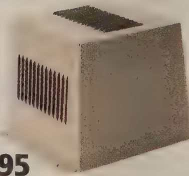
Plastic Siren Cover



Plastic Siren Cover made out of Hi-Density UV-Proof Polypropylene.
Cat L 5305

$29.95

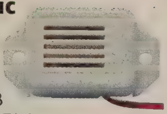
Metal Siren Cover



Protects the siren/horn from the elements. Complete with tamper switch.
Cat L 5300

$32.95

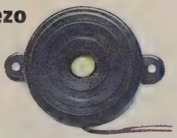
Electronic Buzzer



4-15V DC (15mA).
Output: 70dB
Size: 23(l) x 17(w) x 16mm(h).
Mounting holes 26mm.
L 7009

$5.50

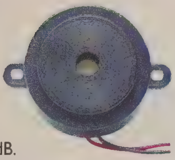
Slim Piezo Alarm



In-built driver.
3-30V DC (2.5-19mA).
Output: 90dB Size: 17mm (dia.) x 14mm high.
L 7024

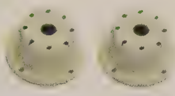
$7.95

2-Tone Piezo



In-built driver.
9-12V DC (40-50mA).
Output: 94dB.
Size: 40mm (dia.) x 23mm.
Mounting holes: 46mm.
L 7027

$12.95



Indoor Siren

7.5-15V (200mA) Output: 105dB
Size: 85mm (diam.) x 43mm.
L 7025

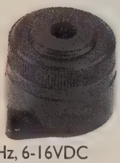
$24.95ea

Electronic Buzzer

PCB Mount
8-16V DC (25mA), Output: 75dB,
Size: 23(l) x 17(w) x 16mm(h).
L 7010

$5.50

Piezo Buzzer 2-Tone



Single tone or pulse 2-tone.
Frequency: 3.5kHz, 6-16VDC (15mA) Output: 90dB.
L 7019

$9.95

Micro Piezo Siren

With adjustable bracket. 12V DC (250mA) Output: 100dB.
L 7029

$19.95ea

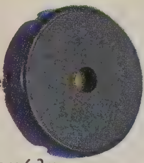
Siren Piezo Rainproof

7-14V DC (250mA)
Frequency 2.4 – 3.7 kHz
Output: 102dB
L 7037

$24.95

Transducers

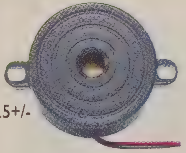
Piezo PCB Mount



Operating voltage (30Vp-p Max), sound pressure level @ 10cm/10Vp-p, square wave 92dB @ 40kHz/10Vp-p, square wave 11mA, capacitance @ 1kHz/1V 25, 000pF (+/- 30%). Size: 22.1mm x 6.3mm.
L 7021

$1.95

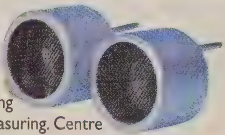
Piezo



5mm high x 30mm diameter. 3-30V p-p AC. Approx 80dB SPL @ 1m. Centre frequency: 4.5+/-0.5kHz.
L 7022

$4.50

Ultrasonic Pair

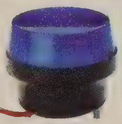


Great for remote control, movement sensing and distance measuring. Centre frequency: 40kHz (+/-1kHz), bandwidth: 3.5kHz @ -6dB.
L 7055

$14.95

Strobe Lights

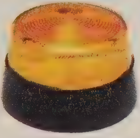
Mini Strobe Blue



65mm diameter, 12V DC (150mA). Flash rate: 75/minute.
L 6002

$29.95

Mini Strobe Yellow



75mm diameter x 45mm high. 12V DC (180mA) Flash rate: 90/minute.
L 6003

$29.95

Strobe Lights

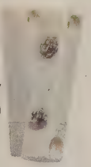
Can be mounted outside. 95mm diameter. 12V DC (180mA). Flash rate: over 90/minute.

Blue	L 6000
Red	L 6004
Amber	L 6006

$39.95

Alarm Switches

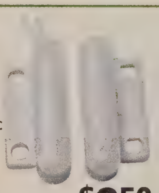
Surface Mount Magnetic Reed Switch



In plastic casing for easy mounting. For any alarm with a normally closed circuit.
L 5210

$5.95

Magnetic Reed Switch



N.O (normally open) magnetic reed switch set.
L 5240

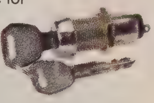
$8.50

Mercury Tilt Switch

Activated when tilted more than 15°. Great for use on motorbikes.
L 5241

$5.95

Barrel Switches



Includes 2 keys for switching home and car alarms.
Large Standard
L 5290
Mini Standard
L 5295

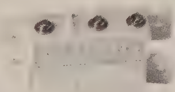
$11.50ea

Concealed Magnetic Reed Switch

Undetectable when recessed in wood doors or windows. For any alarm with a normally closed circuit.
L 5212

$8.50

N.O & N.C



Magnetic Reed Switch with both normally open and normally closed contacts. Easy to mount.
L 5211

$8.50

Cam Lock

Ideal for locking alarm panels, cupboards etc.
MM size: 32mm. 2 keys supplied.
L 5297

$6.95

Large Tubular

L 5291

Mini Tubular

L 5296

$11.50

Camera Systems

NEW FOR '99

B&W CCD Camera System

Small black and white camera features a wide 92° viewing angle, 6 infra-red LEDs for viewing at night and in low light conditions, operating at 0.5 lux minimum illumination. Comes with mounting bracket and video signal cable with RCA plug and is ideal for use in a house, shop, baby room or as a front door guard. Requires a 12V DC 200mA power adaptor (not supplied).

Cat L 5871

$229

ARLEC

CCTV Camera System

This product connects to your existing TV or video and allows you to monitor activities in a baby's room, on your front porch, in factories, schools, hospitals etc. It comes with cables, camera and power supply.

Cat L 5860

$299

ARLEC

CCTV Camera with Sensor

The sensor activates when movement is detected and alerts you to switch on your TV or video. You can watch other programmes on TV without missing a visitor or intruder on your premises.

Cat L 5865

$349

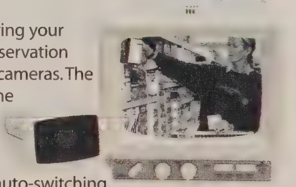
Also available:

Arlec 15m Extension Cat L 5862 **$49.95**

Arlec CCTV Modulator connects to the antenna input of your TV Cat L 5861 **$119.95**

Observation Systems

12.5cm (5") B&W 4-Channel Observation System



Easy-to-install. Ideal for monitoring your home or small business, this observation system can connect up to four cameras. The high-quality monitor displays the clearest possible picture and the camera requires minimal light, as it has built-in infra-red LEDs. It has adjustable camera auto-switching speed (2-60 seconds) and manual/auto selector. Can be easily connected to a VCR. Includes monitor, one camera and a 20m cable.

Cat L 5810

$529

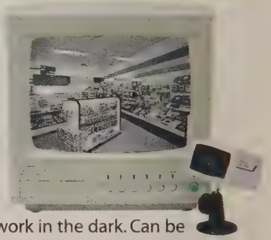
Extra Camera

Optional camera that can be added to the 4 channel system. Includes mounting bracket and a 20m cable. Cat L 5811 **$369**

Additional Cables

40m cable	Cat L 5814	**$69.95**	60m cable	Cat L 5813	**$119.95**

25.5cm (10") B&W 4-Channel Observation System



This system has a large 10" screen. It can be connected with up to four cameras and has a two-way audio system between the camera and monitor. The camera has an in-built infra-red LED which allows the system to work in the dark. Can be easily connected up to a VCR. Includes one camera, a 20m cable and a monitor.

Cat L 5820

$699

Extra Camera

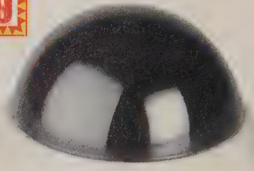
Optional camera that can be added to the 10" system. Includes mounting bracket and a 20m cable. Cat L 5821 **$529**

Additional Cables

40m cable	Cat L 5824	**$79.95**	60m cable	Cat L 5823	**$149.95**

Dummy Security Systems

NEW FOR '99



Dummy Dome Camera

Dummy Security Camera ideal for small shops as a theft deterrent. Easily installed, just screws onto ceiling. Uses a real camera housing.

Cat L 5854

$39.95

Metal Dummy Security Camera

Uses real metal camera housing. In-built red LED (requires 12V DC power supply to operate). Fake DC lead and Coaxial cable with BNC connector. Has an adjustable mounting bracket. Ideal for small business premises to deter theft.

Cat L 5851

$89.95

Dummy CCD Camera

Features realistic metal camera housing, realistic camera lens, sturdy metal bracket and swivel mount. Also features optional flashing red LED. (Requires 1 x D battery).

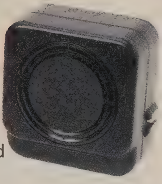
Large Size: 190x58x58mm

Cat L 5852

$119.95

Rhino Car Alarm

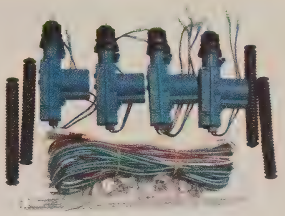
This great priced alarm uses just a 2 wire connection allowing simple DIY installation. It is supplied with one multi-function remote control. It has a two stage shock sensor and a personal panic trigger via remote control. It is supplied with mounting bracket, hardware and warning sticker.
Cat L 5430



$\$79^{95}$

Central Locking System Series 6

Complete 4 door kit. Convert your existing vehicle to the security and convenience of being able to lock/unlock all doors from the driver's door.
Cat L 5421



$\$99^{95}$

VS200 Car Alarm

Has a four button remote control with panic button. Super loud siren with audible arm/disarm confirmation chirp. Easy DIY installation in less than two minutes, comes with adjustable shock sensor and provides voltage drop detection.
Cat L 5449

Uniden
VS200
CAN BE INSTALLED IN ONLY

$\$89^{95}$

Uniden

VS230 DIY Car Alarm

Connect 3 wires! Has remote control, shock sensing, high output siren, a remote panic alarm and super bright flashing LED indicator. Despite the ease of installation – this vehicle security system offers a very high level of protection and reliability.
Cat L 5414

$\$129^{95}$

Uniden

VS250 DIY Expandable Car Alarm

This alarm comes with starter disable option, pre-intrusion shock sensor and door switch input. It is also remote operated and low cost installation with only 4 wires to connect, optional central locking and back-up battery.
Cat L 5413

$\$159$

Uniden

VS1000XR Car Alarm

Three step disarm with selectable auto earm, passive arming and boot/bonnet protection as standard. If you're serious about car security, this is the alarm for you. Optional central locking with the ability to add extra intrusion sensors to increase security.
Cat L 5415

$\$199^{95}$

Car Alarm Accessories

Car Alarm Stickers

These prominent stickers function as an effective deterrent to car thieves. Apply to the inside of the window.
Cat L 5310

ALARM PROTECTED
WARNING

$\$4^{95}$

Alarm Warning Sticker

Let them know your car is protected. Circular sticker, 5cm diameter.
Cat L 5313

ALARM
WARNING
PROTECTED

$\$4^{95}$

Adjustable Door Pin Switch

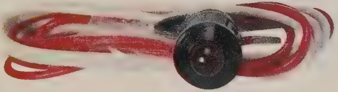
This switch features adjustable length for professional quality installation.
Cat L 5252

$\$4^{50}$

Door/Boot/ Bonnet Switches

Easy to fit and compatible with any car alarm.
Cat L 5256

$\$5^{50}$pr



Red Car Alarm LED

An ideal, easy-to-install flashing security light. Can be wired to ignition as a theft deterrent.
5mm Cat L 5322

$\$13^{50}$

Red Car Alarm LED

An ideal, easy-to-install flashing security light. Can be wired to ignition as a theft deterrent.
10mm Cat L 5323

$\$14^{95}$

Power up with Panasonic

Panasonic Alkaline are recommended for applications where heavy usage is required on a constant basis.

Type	Cat No.	Price
2xAAA	S 7226	**$4.95**
4xAAA	S 7242	**$8.95**
2xAA	S 7227	**$4.95**
4xAA	S 7231	**$8.45**
8 x AA	S 7245	**$15.95**
2xC	S 7228	**$7.45**
2xD	S 7229	**$8.95**
9V	S 7230	**$7.75**

Photographic Batteries

High quality batteries for the high power needs of photographic equipment.

Type	Cat No.	Price
4LR44	S 7422	**$6.95**
LRV08E	S 7423	**$6.95**
CR123A	S 7337	**$19.95**
CRP2P	S 7338	**$19.95**
2CR5M	S 7348	**$19.95**

Extra Heavy Duty Range

An economical range ideal for intermittent use.

Type	Cat No.	Price
2xAAA	S 7236	**$3.45**
4xAA	S 7237	**$4.45**
2xC	S 7238	**$4.25**
2xD	S 7239	**$4.45**
9V	S 7240	**$4.45**
2xN	S 7241	**$7.95**

DURACELL

Video Camera Batteries

DURACELL
RECHARGEABLE BATTERY
LONGER LASTING
DURACELL
RECHARGEABLE BATTERY
+50%

Nickel Metal Hydride Rechargeables give up to 50% longer life and there is no memory effect – top up at any time!

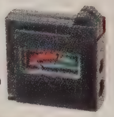
Duracell DR11	S 3357	6V 3600 mAH fits JVC, older Panasonic, Sanyo and Sony camcorders	**$179.95**
Duracell DR14	S 3359	4.8V 3600 mAH fits Newer Panasonic except NV577, NV588 and NV599 models	**$149.95**
Duracell DR10	S 3504	Duracell DR10 Video camera battery 6v 1800mAH. Fits JVC, older Panasonic, Sanyo and Sony camcorders.	**$99.95**

Battery Tester

Tests all common batteries including 9 volt and button cells.

Cat Y 5018

$9 95



Computer Clock Battery
RAYOVAC

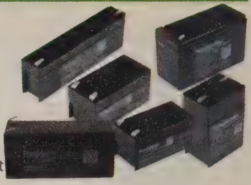
Computer Batteries

S 3339	BR232S Lithium replacement battery for expansion board real time clock 3V	**$9.95**
S 3338	RAYOVACs 844 battery utilises alkaline technology that is optimised for low current, long life applications. Specifically designed as a high reliability, low cost battery for IBM. AT and AT compatible real time clock back-up. 4.5 Volts. Nominal Capacity 600mAh	**$44.95**
S 6179	TL5242 Computer battery 3.6 volt 2 wire leads to 2 way connector	**$49.95**

Panasonic Rechargeable Batteries

Panasonic

Maintenance Free!! Sealed Lead Acid Batteries



These Lead Acid sealed batteries require no maintenance, are leak proof, and can be either trickle charged or fast charged. Ideal for emergency lighting systems, computer memory backup supplies, security alarms and test equipment. Recharging time depends on the depth of discharge. Full specifications are available from your local Dick Smith Electronics store.

12V, 1.3Ahr	S 7368	**$59.95**	97mm x 56mm x 47.5mm
12V, 2.2Ahr	S 7367	**$69.95**	177mm x 60mm x 30mm
12V, 3.4Ahr	S 7366	**$79.95**	134mm x 67mm x 60mm
12V, 6.5Ahr	S 7369	**$74.95**	151mm x 94mm x 64.5mm
6V, 4Ahr	S 7363	**$64.95**	70mm x 108mm x 48mm

Rechargeables

Panasonic Rechargeable batteries offer exceptional reliability. Made in Japan Panasonic rechargeables takes up to 1000 charges. When normal batteries are costing you a small fortune switch to rechargeable and **SAVE $$.**

Standard Rechargeables 1.25 Volt

Type	Description	Cat No	Price
2 x AAA	250MAH	S 7246	**$12.95**
2 x AA	650MAH	S 7247	**$10.95**
2 x C	1500MAH	S 7248	**$21.95**
2 x D	1500MAH	S 7249	**$23.95**

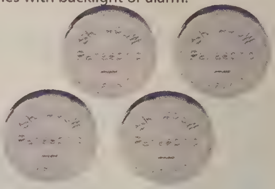
Specialist Batteries

Panasonic

High Performance Watch Batteries Silver Oxide

Silver Oxide batteries to keep your watch running longer. High drain batteries that are suitable for watches with backlight or alarm.

SR41	S 7459	**$6.50**
SR43	S 3295	**$6.50**
SR44	S 3293	**$7.50**
SR1120	S 7458	**$6.50**
SR621	S 7454	**$6.50**
SR626	S 7456	**$6.50**
SR920	S 7455	**$6.50**
SR927	S 7461	**$6.50**
SR1130	S 3292	**$6.50**



Alkaline Button Cell

Alkaline Button Cell batteries ideal for calculators and games.

Type	Cat No.	Price
LR41	S 7457	**$6.50**
LR43	S 7443	**$4.75**
LR44	S 7444	**$4.75**
LR54	S 7445	**$4.75**

Lithium

Commonly used in Digital Diaries.
For the longest life in all the popular sizes.

Type	Cat No.	Price
CR2016	S 3332	**$7.50**
CR2025	S 3330	**$7.50**
CR2032	S 3331	**$7.50**
CR1220	S 3337	**$8.50**

Arlec Rechargeables

Reliable black label NiCads from Arlec. You know the name, you can be sure of the quality.

2 x AAA	Cat S 3406	**$9.95**
2 x AA	Cat S 3407	**$8.95**
4 x AA	Cat S 7244	**$18.50**
2 x C	Cat S 3408	**$19.95**
2 x D	Cat S 3409	**$22.95**
1 x 9 volt	Cat S 3410	**$24.95**

ARLEC
Rechargeable

Specialist Batteries

2 x AA Lithium Energizer L19Bp2	Cat S 3261	**$14.95**
9 Volt Lithium Ultralife	Cat S 3165	**$20.50**
6 Volt Heavy Duty Panasonic 609	Cat S 7352	**$9.95**
6 Volt Heavy Duty Eveready 731	Cat S 7353	**$22.95**
AAAA x 2 battery	Cat S 3275	**$9.95**
12 volt GP27A	Cat S 3434	**$6.95**

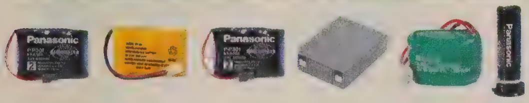
Energizer
HI ENERGY LITHIUM
ULTRALIFE
LITHIUM POWER CELL

Solder Tab Rechargeables

Type	Description	Cat No	Price
AA	600mAh	S 3412	**$8.95**
Sub C	1.2V 1.3Ah	S 7124	**$13.95**
C	1.2V 2Ah	S 3411	**$14.95**

SUB-C SIZE
MADE IN USA
SANYO
CADNICA

Cordless Phones Batteries



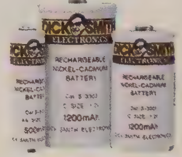
Cat No.	Description		To Suit	Price
S 7349	AA x 3	3.6v	Telecom Manhattan	**$27.95**
S 7360	N x 3	3.6v	James Hardie CP1000	**$27.95**
S 7356	AA x 3	3.6v	Panasonic KXT3806/3826/3716/7622	**$27.95**
S 6178	N x 3	3.6v	Sanyo CLT5200/5280/5800/CLA1380	**$27.95**
S 3307	KXA37	3.6v	Panasonic KXT3000	**$27.95**
S 7358	AA x 3	3.6v	Tele 1150	**$27.95**
S 7359	AA x 3	3.6v	Telecom 200/400, GEC	**$27.95**
S 7361	N x 3	3.6v	Uniden SC310/320/340/343/360 Panasonic KXT3806/4300	**$27.95**
S 3510	Pyramid	3.6v	Shimasu	**$27.95**
S 3507	Triange	3.6v	Custom C5000	**$27.95**
S 3509	Stack 4 cell	4.8v	Uniden Profile	**$27.95**
S 3421	KXA38	3.6v	Panasonic KXT4006	**$27.95**
F 9839	BPT40	4v	To suit Sony SPP1010/2010	**$44.95**
F 9406	BP9100	6v	To suit Uniden LC9100	**$49.95**
S 3430	BP9100	3.6v	To suit DSE Cordless Phone	**$27.95**
S 3511	CTA633		To suit Uniden 633/630	**$27.95**
S 3512	NIMH		To suit Belcom BP4010	**$44.95**

Dick Smith Electronics Rechargeables

Our own brand of rechargeable NiCad batteries have been chosen for their high quality, high reliability and value for money. Made in Japan.

Individual Batteries

No/Type	Desc.	Cat No	Price
1 x AAA	180mAh	S 3305	**$4.95**
1 x AA	500mAh	S 3300	**$4.95**
1 x C	1.2Ah	S 3301	**$8.95**
1 x D	1.2Ah	S 3303	**$9.95**



Blister Pack

No/Type	Desc.	Cat No	Price
2 x AA	600mA	S 3151	**$9.95**
4 x AA	600mAh	S 3150	**$17.95**
2 x C	1.2Ah	S 3152	**$19.95**
2 x D	1.2Ah	S 3154	**$19.95**
1 x 9 Volt	NiCad	S 3155	**$23.95**

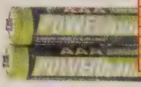
Heavy Duty Rechargeable

Type	Desc.	Cat No	Price
AA x 1	600mAh	S 3312	**$5.95**
AA x 1	1000mAh	S 3304	**$6.95**
C x 1	2Ah	S 3311	**$12.95**
D x 1	4Ah	S 3310	**$16.95**

Nickel Metal Hydride Rechargeable

NEW FOR '99

2 x AAA NIMH Rechargeable 550mah	Cat S 3157	**$14.95**
2 x AA NIMH Rechargeable 1300mah	Cat S 3159	**$15.50**



NiCad Battery Pack

9.6 Volt Cat S 3313 **$36.95**

The all new rechargeable 1.5 volt alkaline batteries. Fully charged and ready for immediate use. 25-600 charges possible. 0% cadmium, 0% mercury, 0% nickel means safe on the environment. 5 years shelf life.

Rechargeable Alkaline

AAA x 4 650 MAh	Cat S 3481	**$22.95**
AA x 4 1500 MAh	Cat S 3482	**$22.95**
RAM Energy Set – Charger + 4 x AA Rechargeable Alkaline Battery	Cat S 3485	**$49.95**

Battery Holders

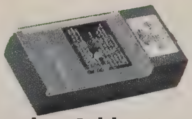
Description	Cat No.	Price
2 x AAA Cells	S 6143	**$1.65**
4 x AAA Side by side	S 6140	**$2.25**
2 x AA Snap Terminal	S 6112	**$1.65**
4 x AA Long and flat	S 6114	**$2.25**
4 x AA Square	S 6124	**$2.25**
6 x AA Rectangular	S 6116	**$2.25**
8 x AA Rectangular	S 6128	**$3.25**
10 x AA White	S 6130	**$4.95**
1 x C	S 6103	**$2.25**
4 x C Cells, flat	S 6104	**$3.25**
1 x D	S 6101	**$2.25**
4 x D Side by side	S 6102	**$3.25**
216 9 Volt	S 6150	**$6.95**
216 9 Volt Battery Snap	S 6100	**$1.65**
Lithium Button Type	S 6160	**$6.95**
1 x N Cell	S 6147	**$1.65**
3 x AA with switch	S 6153	**$1.65**
4 x AA with switch	S 6154	**$1.95**
2 x AA with switch	S 6155	**$1.65**

Battery Chargers

NiCad Battery Charger

Plug in external charger for easy recharging without removing the batteries. It will recharge 7.2-12 volt cells and comes with a multi-way adaptor to fit most charging jacks. Fully approved.
Cat M 9617

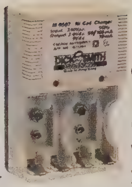
$24.95



Charging Cabinet

Charges up to 8 "AA" or "AAA" NiCads or up to 4 of these plus two 9V cells. It has an indicator LED for each compartment. Just plug it into the mains. Batteries not included.
Cat M 9508

$29.95



5 Hour Fast Charger

This compact unit has a 3-pin plug is built into the back of it. Charges 2 or 4 "AA" or "AAA" NiCads or 1 or 2 x 9V cells and an indicator LED is provided for each compartment.
Cat M 9507

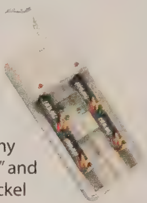
$29.95

9.6V NiCad Battery Charger

Will charge up your 9.6V battery packs in just 2 hours. It includes a connector to suit our S-3313 Battery Pack.
Cat M 9618

$34.95

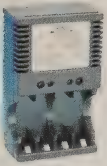
ARLEC



NiCad Universal Battery Charger

Will charge any 9V, "D", "C", "AA" and "AAA" size Nickel Cadmium battery. Can take up to 6 batteries at any one time. Excellent value for money with 4 "AA" NiCads "FREE".
Cat M 7486

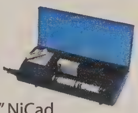
$34.95



NiCad Battery Charger

Charges 2 or 4 "AA" size NiCad recharge-able batteries. Fully automatic operation with automatic discharge before charging, timed 2-hour fast charge and pulse trickle charge. Minimises "memory effect", LED status indication. Reverse polarity protection.
Cat M 9500

$39.95

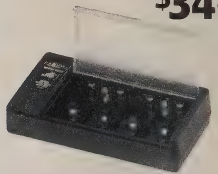


Charger Cabinet

Fast charges 2 or 4 "AAA", "AA", "C" or "D" NiCad batteries in 5 hours, or up to two 9V batteries in 10 hours. Automatic cut-off and trickle charge to prevent self-discharging, an LED charge status indicator and reverse polarity protection. Batteries not included.
Cat M 9504

$39.95

Limited Stocks Available



NiCad/NiMH Cabinet Charger and Discharger

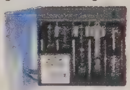
An economical charger that is ideal for the most common NiCad and NiMH batteries. Charges up to 2 or 4 'AAA, AA, C, D' batteries or up to 2 x 9V cells.
Cat M 9503

$24.95

Universal Charging Cabinet

Charges from 1 to 8 "AAA", "AA", "C" and "D" batteries in almost anycombination. It'll even charge up to 3 9-volt batteries at once. Includes indicator lights for each compartment plus a test meter. Batteries not included.
Cat M 9505

$49.95



High Capacity Battery Charger

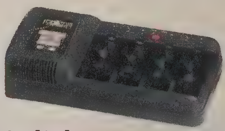
Charges up to 8 high capacity NiCad batteries at once. Charges 600mAh "AA", 1.8Ah and 2Ah "C", 4Ah "D" cells and up to 4 x 9V at their correct rates. It includes indicator lights for each compartment and plugs into the mains. Batteries not included.
Cat M 9506

$54.95

NiCad/NiMH Fast Plug-In Charger

Charges up to 4 'AA' or 'AA' or up to 2 x 9V cells. Will charge in five hours NiCad and eight hours NiMH.
Cat M 9502

$34.95

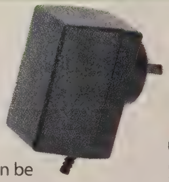


NiCad/NiMH Fast Cabinet Charger

Charges up to 4 'AA' or 'AAA, C, D' or up to 2 x 9V cells. Will charge in five hours NiCads and eight hours NiMHs.
Cat M 9501

$44.95

Sealed Lead Acid Battery Chargers



12 Volt Battery Charger

Delivers 500mA and, because it can be left running, it's ideally suited for charging the sealed lead-acid and gel-cell type batteries used in burglar alarms.
Cat M 9531

$39.95

Also available:
6V Charger Cat M 9431 **$39.95**

ARLEC

6V/12V SLA Charger

Selectable 6V or 12V 1 amp output. Battery clips allow for easy connection to a variety of batteries.
Cat M 7521

$49.95

ARLEC

Battery Charger

Arlec 12V 4A battery charger, features a battery condition analyser function and offers short-circuit protection. A strong flame retardant case.
Cat M 9805

$49.95

ARLEC

Auto Boost 6A Battery Charger

LED display for 12-volt batteries used in cars, caravans and boats. An automatic charging mode to hold batteries to full charge and a condition analyser function.
Cat M 9806

$84.95

9V DC @ 200mA

An economical supply suitable for equipment that uses 9V DC or a 9V transistor type battery such as cassettes and transistor radios. Comes with 3.5mm plug (tip positive) and simply plugs into mains.
Cat M 9614

$24.95

9V DC @ 600mA

A high-power, fixed-voltage 9V supply suitable for equipment that needs that little extra power. Supplied with multi-way output adaptor. Selectable polarity.
Cat M 9560

$34.95

12V DC @ 1 Amp

This high-power supply comes in a compact plug-in style case and is ideal for a wide range of applications including alarm systems and intercoms. Offers selectable polarity and is supplied with a multi-way output adaptor.
Cat M 9670

$39.95

12V DC @ 1A with Lighter Socket

The cord mounted lighter socket on this power supply allows you to power 12V car or cellphone accessories in the home or garage. Rated at 1 amp.
Cat M 9671

$39.95

Multi-Voltage DC Supplies

3-4.5-6-7.5-9-12V DC @ 200mA (300mA max)

With 6 selectable voltages, this is an extremely versatile supply for around the home and workshop. Includes selectable polarity and multi-way output adaptor.
Cat M 9626

$29.95

6-7.5-9-12V DC 1A

Similar to M-9627 but offers four voltage selections to a maximum of 1 Amp.
Cat M 9628

$39.95

Regulated 3-6-9-12V DC @ 0.9 Amp

High-output, heavy-duty supply with 4 voltage selections to a maximum of 0.9 amp. Has overload protection and simple screw terminal connections.
Cat M 9630

$44.95

3-4.5-6-7.5-9-12V DC @ 500mA

High-current DC supply suitable for devices that need more power such as battery-powered TVs and toys. Six-voltage selection makes it ideal for a large range of products. Supplied with multi-way output adaptor and has selectable polarity.
Cat M 9627

$32.50

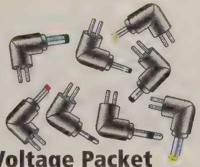
Regulated Power Supply

NEW FOR '99

Regulated output suitable for use with more sensitive electronic apparatus. Provides selectable 3, 4.5, 6, 7.5, 9, 12V 500mA reversible polarity output with connectors to suit most devices.
Cat M 9727

$39.95

DC Supply Accessories



DC Voltage Packet of 8 Adaptor Plugs

Male: 2.5, 3.5. Female: 0.7, 1.7, 3.5, 5, 5.5.
Cat M 9600

$9.95

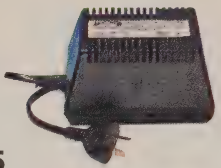
Voltage Adaptor DC Extension

2 metre long lead.
Cat M 9601

$7.50

DC Adaptors

Unregulated Power Supply



An unregulated power supply ideal for portable TVs and car radios. It has a power rating of 13.8V DC at 1.5A. (18V max.)
Cat M 9544

$64.95

13.8V @ 1.5A Regulated

PANTHER
POWER

A 13.8V @ 1.5A DC regulated supply with screw terminals for easy connection. Ideal for CBs, car stereos, and small amateur transceivers (particularly handhelds). Also makes a great service supply.
Cat M 9545

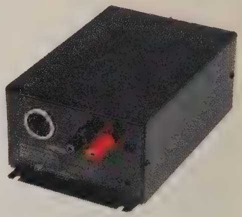
$99

13.8V @ 4A Peak

Ideal for high-current, high peak demand applications. 3-amp continuous (or 4A continuous @ 75% duty cycling). Ideal for small HF transceivers, as a bench supply, or a supply for 'auto' equipment.
Cat M 9547

$139

13.8V @ 5 Amp/7 Amp Surge



With a 5 amp continuous rating and able to supply up to 7 amps during surges, this supply is ideal for amateur transceivers, bench supply or running auto stereo equipment. Comes with a cigarette lighter socket.
Cat M 9546

$169

DC Voltage Converters

Adaptor Multi-Voltage 800mA

NEW FOR '99

1.5, 3, 4.5, 6V @ 500mA. 7.5, 9, 12V @ 800mA. Simply plugs into a car cigarette lighter socket and allows you to switch voltages to run a large range of battery-powered devices. Has selectable polarity and is supplied with an assortment of plugs.
Cat M 9683

$29.95

Adaptor Multi-Voltage 1500mA

NEW FOR '99

Converts car voltage 1.5, 3, 4.5, 6, 7.5, 9, 12V @ 1.5A Auto. Simply plugs in to the car cigarette lighter and allows you to switch voltage. Also allows you to change the angle of the device for better convenience.
Cat M 9682

$39.95

Adaptor 24/12V-4.5V

NEW FOR '99

Converts 24 volt or 12 volt input to 4.5V @ 0.7A. Allows for the unit to plug into cigarette lighters of cars and trucks that are 24 volts. Supplied with an assortment of plugs.
Cat M9687

$24.95

Adaptor 24/12V-6.0V

NEW FOR '99

Converts 24 volt or 12 volt input to 6.0V @ 0.7A. Allows for the unit to plug into cigarette lighters of cars and trucks that are 24 volts. Supplied with an assortment of plugs.
Cat M 9688

$24.95

Adaptor 24/12V-9.0V

NEW FOR '99

Converts 24 volt or 12 volt input to 9.0V @ 0.7A. Allows for the unit to plug into cigarette lighters of cars and trucks that are 24 volts. Supplied with an assortment of plugs.
Cat M 9689

$24.95

Converter 24V DC to 12V DC @ 2 AMPS

NEW FOR '99

Converts 24 volts to 12 volts DC with a 7amp surge. Gives 13.8V @ 2 amps DC continuously (7A surge rating) from a 24V supply. This sturdy regulated supply is ideal for running CBs and stereo systems in trucks with 24V systems (some caravan parks also supply 24V).
Cat M 9813

$89.95

NEW FOR '99

24V/12V DC Converter 10A

A rugged electronic voltage converter developed specifically for mobile radio applications in commercial and heavy vehicles with 24VDC systems. Provides 8 Amps continuous with a peak output of 10A at 12VDC.
Cat M 9815

$179

Convert 24V DC to 12V DC @ 20 AMPS

NEW FOR '99

Converts 24 volts to 12 volts DC with a 25 amp surge. Gives 13.8V @ 20 amps DC continuously (25A surge rating) from a 24V supply. This sturdy regulated supply is ideal for running CBs and stereo systems in trucks with 24V systems (some caravan parks also supply 24V).
Cat M 9814

$229

AC Supplies

DICK SMITH
POWER SUPPLY

9.3V AC @ 1 Amp

Supplied with 2.1mm and 2.5mm plug.
Cat M 9653

$\$29^{95}$

DICK SMITH
AC/AC ADAPTOR

12V AC @ 500mA

Used for a wide range of cordless phones and many other household appliances. Supplied with 2.1mm plug.
Cat M 9655

$\$29^{95}$

12V AC @ 1 Amp

Supplied with 2.1mm and 2.5mm plug.
Cat M 9656

$\$34^{95}$

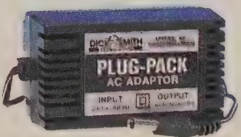
DICK SMITH
AC ADAPTOR

16V AC @ 900mA

Ideal for alarm panels, small TVs and some answering machines or as a power supply for experimental work. Comes without plug (output) so you can fit the one that is appropriate for the appliance.
Cat M 9667

$\$34^{95}$

16V AC @ 1.5 Amp



A high power supply suitable for small TVs, keyboards, etc where power demands are heavy. It's double insulated for added safety. Supplied with 2.5mm plug.
Cat M 9668

$\$39^{95}$

24V AC @ 1.5 Amp

Supplied with a multi way output adaptor
Cat M 9635

$\$49^{95}$

Stepdown Transformers

240-115V 24VA

DICK SMITH ELECTRONICS
STEPDOWN TRANSFORMER

Provides power for small appliances such as small battery chargers and radios where the load doesn't exceed 25W. Plugs directly into mains.
Cat M 1155

$\$59^{95}$

240-115V 50VA

Provides power for appliances where the load doesn't exceed 48 watt (0.42A) capacity. Plugs directly into mains.
Cat M 1159

$\$99^{95}$

NEW FOR '99
WARNING

Stepdown Transformer 100VA

Compact stepdown transformer with US 3 pin socket suitable for small appliances using up to 100VA (0.87A at 110-115VAC).
Cat M 1149

$159

240-115V 250VA

For more heavy-duty applications, this transformer has 2.17A (250W) capacity. Suitable for personal computers, small sound systems and other appliances that require high power. Includes non-slip feet and carry-handle.
Cat M 1152

$199

240-115V 500VA

For larger applications requiring additional power. With a 500VA rating this transformer is good for up to 4.3 amps.
Cat M 1153

$279

240-115V 1000VA

Ideal for running larger appliances. This transformer can deliver up to 8.7 amps.
Cat M 1154

$475

Step-Up Transformers

115-240V 24VA Adaptor

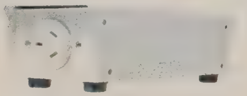
Powers small appliances overseas. Not for use in New Zealand. Input: 115V. Output: 240V 24VA.

Cat M 1179 **$59.95**

115-240V 65VA Adaptor

Powers large appliances overseas. Not for use in New Zealand. Input: 115V. Output: 240V 65VA.

Cat M 1180 **$129.95**



Inverters

Plug this inverter into the cigarette lighter socket in your car or boat (or any 12V power source) to provide 230V AC power for most electrical equipment. Great for smaller televisions and VCRs, personal computers, small kitchen appliances and other 230V devices that you may want to use in remote locations. They all have electronic overload and temperature shutdown.

12-240V 75W Statpower

DC Input Voltage: 10-15V (12V Nominal)
Output Frequency: 50Hz
Output Wave Form: Modified Sine, Phase Corrected
Output Power: 150W (Surge)
70W (Continuous)
Weight:
Cat M 5016 **$199**

12-240V 150W Inverter

NEW FOR '99

DC Input Voltage: 10.7-14.5V (12V Nominal)
Output Frequency: 50Hz
Output Wave Form: Modified Sine, Phase Corrected
Output Power: 160W (Surge)
150W (Continuous)
Weight: 700g
Cat M 5100 **$299**

12-240V 300W Inverter

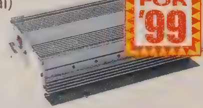
NEW FOR '99

DC Input Voltage: 10.5-14.5V (12V Nominal)
Output Frequency: 50Hz
Output Wave Form: Modified Sine, Phase Corrected
Output Power: 310W (Surge)
300W (Continuous)
Weight: 900g
Cat M 5101 **$399**

12-240V 500W Cherokee Inverter

NEW FOR '99

DC Input Voltage: 10-14V (12V Nominal)
Output Frequency: 50Hz
Output Wave Form: Modified Sine, Phase Corrected
Output Power: 1200W (Surge)
500W (Continuous)
Weight: 2300g
Cat M 5001 **$499**



12-240V 650W Inverter

NEW FOR '99

DC Input Voltage: 10.7-14.5V (12V Nominal)
Output Frequency: 50Hz
Output Wave Form: Modified Sine, Phase Corrected
Output Power: 1000W (Surge)
650W (Continuous)
Weight: 1100g
Cat M 5102 **$599**

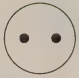
Travel Adaptors

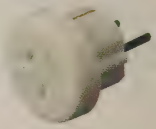
KORJO

New Zealand to Europe

Converts New Zealand mains plug to fit European style. Also Bali, Noumea, Tahiti, parts of Middle East, Asia and South America. Does not convert voltage.

Cat M 7314 **$14.95**



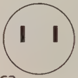


KORJO

New Zealand to Japan

Converts New Zealand mains plugs to suit Japanese, Mexico, Taiwan and parts of South America. Does not convert voltage.

Cat M 7315 **$14.95**

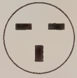


KORJO

New Zealand to UK

Converts New Zealand mains plug to fit UK, Ireland, Singapore, Hong Kong, parts of the Middle East and Africa. Does not convert voltage.

Cat M 7312 **$14.95**

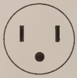


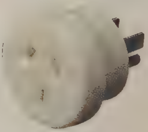
KORJO

New Zealand to USA

Converts New Zealand mains plug to suit USA and Canadian style plugs. Does not convert voltage.

Cat M 7316 **$14.95**



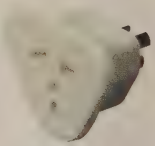


KORJO

Multi Reverse Adaptor

Converts USA, Japan, Europe, Great Britain and many other mains plugs to the New Zealand system. Earthed for safety. Does not convert voltage.

Cat M 7302 **$14.95**



Traveller's Plug Set

Ideal for the overseas traveller. This handy little pack allows you to convert your New Zealand fittings to any number of mains fittings overseas. Does not convert voltage.

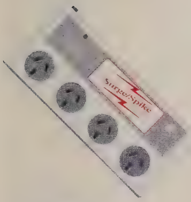
Cat M 7301 **$22.50**

WORLD TRAVELLERS PLUG SET

Power safe protection plan

The Powercor range of power protection products have been specifically designed to provide effective protection against the most troublesome and prevalent forms of power disturbance found on your AC mains power supply. These disturbances, Surges, Spikes, EMI & RFI electrical noise (Transient spikes), Power failures and Brown outs have been linked directly to computer and electronic malfunctions such as Read/Write errors, Hardware component failure, Memory loss, Corrupt files, System Crashes and lost data. For long term reliability and immediate protection we recommend you consider the protection these products can offer you.

Internet/fax ready

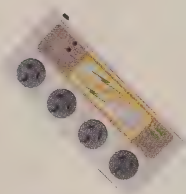


ZAPTRAP PC15N Surge Spike Protector

Surge spike protector for use with home computers and electronically operated domestic appliances. Plugs directly into wall outlet and provides 4 protected outlets. Simple, quick, affordable protection.

Cat M 7191

$59

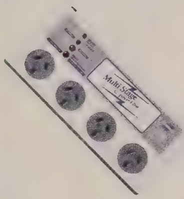


ZAPTRAP PC30N Power Filter

Personal series power filters ideal for Home/Small office applications looking for an all round surge/filter protection product to provide peace of mind computing. Fitted with 4 outlets, this unit will protect computer, printer, modem and other connected equipment to the AC power.

Cat M 7192

$99



ZAPTRAP PC10N Power Filter Heavy Duty

Business series power filters, this unit incorporates a high performance multi stage tuned filter with a heavy duty front end surge protection circuit. Ideally for busy office areas, rural applications, or storm prone areas. Essential for system reliability.

Cat M 7193

$139

ZAPCATCHER PC30NJ2 Power Filter with Telecom Line Surge Protector

Features the same high specification filter circuitry as used in the PC30N but also incorporates a 20,000 amp Telecom line surge protector to provide back door protection from surge and spikes entering through the Modem/Fax/Phone Interface.

Cat M 7195

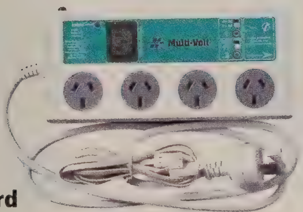
$159

ZAPCATCHER PC10NJ2 Power Filter Heavy Duty with Telecom Line Surge Protection

Features the same high specification filter circuitry as used in the PC10PN but also incorporates a 20,000 amp Telecom line surge protector to provide back door protection from surge and spikes entering through the Modem/Fax/Phone Interface.

Cat M 7196

$179



NEW FOR '99

MultiVolt Power Board PCMV10

MultiVolt is a unique product that combines the benefits of surge and spike protection for both telephone and multiple mains sockets plus the added bonus of two regulated 600mA DC power supplies. Each DC supply offers switchable voltage, one between 5V and 9V, the other between 9V and 12V, making them ideal to run speakers and other accessories which use a DC supply.

Cat M 7269

Available August

$159

NEW FOR '99

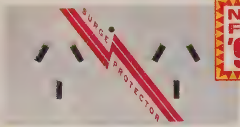
Tele-Switch

Auto pause for connected equipment, when you pick up the phone or answer a call. Features: 4 x surge spike protected power outlets plus one Tele-Switch power point. When you answer the phone Tele-Switch turns connected equipment off and back on when you hang up the phone. Ideal for small offices, in the lounge or bedrooms, where you want to listen to music or your favourite talk back, but need the peace and quiet when you're on the phone.

Cat M 7267

Available July

$89



NEW FOR '99

HPM Surge Double Adaptor

Protect up to 2 devices
with this surge/spike filter.
Cat M 7153

$19.95

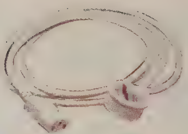
SurgeAlert
Audible – Visible Alarm

NEW FOR '99

HPM Surge Double Adaptor with Buzzer

Single MOV protection for two devices with audible indication of damaging spikes and surges.
Cat M 7149

$22.50



HPM IEC Surge Protection Lead

Convenient single MOV surge/spike protection in a standard IEC lead suitable for computers and printers etc.
Cat M 7166

$22.50

NEW FOR '99

DSE

Surge Protector

Single outlet 3 MOV protector guards against damaging spikes and surges.
Cat M 7171

$24.95

click
SURGEBUZZER
Replace if buzzing, a severe power surge has occurred.

click

Surgebuzzer

Provides 3 MOV protection for a single device with an audible protection status indicator.
Cat M 7151

$24.95

HPM 4-Way Switched Surge Board

4 individually switched, single MOV surge protected outlets with labels for easy identification and visual protection status indication.
Cat M 7165

$69.95

ARLEC 4 and 6 Way Surge Power Boards

Protect your electronic equipment from damaging power surges and voltage spikes. These Arlec powerboards come with an overload protection circuit breaker which will shut off in the event of overloading. Specifications: Input: 240v, 50Hz (max 10 amps); Surge Capacity: to 4,500 amps; Max Continual Voltage: 275 VAC; Reaction Time: Less than 25nsec; Clamping Voltage: 710 volts, 50 amps.

4-Way Cat M 7164 **$29.95**

6-Way Cat M 7184 **$39.95**

PANAMAX
SURGE PROTECTION

Panamax 6 Way Filter

The Panamax Max6 Allpath provides AC noise filtration and surge/spike protection with a specially designed 6 outlet layout which allows bulky plugpacks to be used side by side. Input: 240VAC 50/60Hz; Respone Time: <1 ns; Initial Clamping Voltage: 430V (304V RMS); Single Pulse Joule Rating: 1057 Joules.
Cat M 7181

NEW FOR '99

$149

Uninterruptable Power Supplies

MINI GUARD 300VA UPS

Offers a cost effective protection from power failures, brownouts, surges and spikes. Essential protection where the loss of valuable data is unacceptable. Perfect for small office/home office applications.
Cat M 7619

$249

NEW FOR '99

BLACKOUT BUSTER

Baby Blackout Buster 500VA UPS

A cost effective entry level version of the Blackout Buster. 500VA capacity makes it ideal for small office/home office applications, protecting your valuable equipment from power blackouts, spikes and severe low/high voltages. Incorporates fax/modem spike protection.
Cat M 7698

$329

Blackout Buster 500VA UPS

BLACKOUT BUSTER

NEW FOR '99

Offers a complete power protection system for your computer, phone or security system. Protects against power blackouts and smooths out fluctuations in the power supply. Provides surge/spike protection for power and phone devices. Uniquely expandable, the unit allows you to add additional battery packs to increase either power output or backup time. Comes with automatic filesaving software for Windows 95.
Cat M 7618

$429

Expansion Power Pack
Customer order only Cat M 7697 **$399**

RCDs

BODYGUARD
SAFETY SWITCH ADAPTER
PROTECT AGAINST ELECTROCUTION

RINGGRIP

Bodyguard Safety Switch Regulator

Automatically switches off to prevent electrocution.
Cat M 7484 **$39.95**

RINGGRIP

Bodyguard Safety Switch & Extension Lead

BODYGUARD
3 METRE
PROTECT AGAINST ELECTROCUTION

Should a fault occur that allows electric current to enter your body, bodyguard will instantly shut down. Comes with 3 metre household lead.
Cat M 7482 **$49.95**

RINGGRIP

Bodyguard Safety Switch Powerboard

BODYGUARD
SAFETY SWITCH POWERBOARD

Plug this into any appliance.
Bodyguard removes the major cause of electrocution in the home.
Cat M 7483 **$59.95**

HPM **Safety Switch & Cord**

Attach this to your electrical tools to prevent electrocution by cutting off your power and ensuring the power stays off until you press the restart button. A blue button indicates when the unit has tripped on an earth fault. With 1.6-metre lead.
Cat M 7294 **$59.95**

Extension Leads

RINGGRIP
5.5 METRE

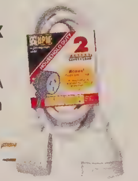
RINGGRIP

Extension Leads

Fully approved for use with 240V 10A.

3.5 Metre	Cat M 7530	**$12.95**
5.5 Metre	Cat M 7531	**$14.95**
7.5 Metre	Cat M 7533	**$16.95**
10.5 Metre	Cat M 7532	**$18.95**

HPM **Piggy Back Extension Leads**



Fully-approved 240-volt 10A extension leads fitted with a socket on one end and a piggy-back double-adaptor plug on the other.

1 Metre	Cat M 7080	**$6.95**
2 Metre	Cat M 7081	**$9.95**
4 Metre	Cat M 7082	**$14.95**
6 Metre	Cat M 7083	**$19.95**
10 Metre	Cat M 7084	**$26.95**

ARLEC

Smart Leads

ARLEC
Smart Lead
180 swivel plug

These leads have a flush swivel plug on one end and a standard socket on the other. 240-volt 10A. Ideal for using behind wall units, sideboards or other hard to reach wall sockets.

2m	Cat M 7362	**$10.50**
3m	Cat M 7363	**$12.50**
5m	Cat M 7364	**$14.50**
7m	Cat M 7365	**$16.50**
10m	Cat M 7366	**$19.50**

Heavy Duty Leads

RINGGRIP
15

RINGGRIP

Heavy Duty Leads

Durable heavy duty 240V 10 Amp.

15 Metre	Cat M 7491	**$34.95**
20 Metre	Cat M 7492	**$49.95**
30 Metre	Cat M 7493	**$59.95**

LIMITED STOCKS AVAILABLE

Double Adaptors

ARLEC

Double Adaptor

Single
Cat M 7109 **$3.95**

HPM

Standard

Fits any standard wall socket.
Cat M 7100 **$4.95**

Slim Left

Suits vertical double power points.
Cat M 7106 **$4.95**

Slim Right

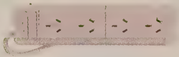
Suits vertical double power points.
Cat M 7107 **$4.95**

Multi Socket Power Boards

ARLEC
Slimline Power Board

ARLEC **4-Way Power Board**

With 1-metre cord.
Cat M 7113 **$9.95**



click **4-Way Vertical**

With 1 metre cord.
Cat M 7119 **$14.95**

ARLEC **6-Way Power Board**

With 1-metre lead.
Cat M 7117 **$16.95**

HPM **8-Way Power Board**

With 1-metre cord.
Cat M 7118 **$39.95**

HPM **4-Way Switch Power Board**

Cat M 7133 **$49.95**

HPM **12-Way Power Board**

With 1-metre cord.
Cat M 7120 **$59.95**

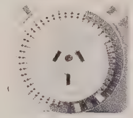
Timers

ARLEC 24 Hour 'Quickset' Timer

This easy to operate timer allows you to switch on and off appliances once per day.
Cat M 7214
$16.95

ARLEC 24 Hour Timer

Just plug it into the mains socket and set it to turn appliances on or off up to 24 times in one day.
Cat M 7481 **$19.95**



ARLEC 24 Hour Timer

Turns appliances on or off up to 24 times a day,has 8 timer pins and allows on/off programme. Extra pins available.
Cat M 7200
$24.95

ARLEC 7 Day Timer

Allows you to switch appliances on/off up to 42 times in any 7 days. Comes with 16 pins allowing 8 on/off programs and manual override.
Cat M 7202
$24.95

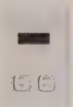
ARLEC Compact Digital Timer

Up to 6 on/off switching commands daily, 24 hour specific days, weekdays, weekend and different days programming options. Random on/off function.
Cat M 7218
$39.95

DSE Timer Digital - 7 Day

NEW FOR '99

Operates as a 7 day and 24 hour timer. Set up to 6 progams to the minute. LCD display, rechargeable battery pack and manual override.
Colour may vary from pic shown
Cat M 6210
$49.95

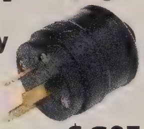


HPM Timer Light Switch

Replaces standard light switch and allows automaitc on/off switching of household lights up to 6 times per day. Great for the holiday season.
Cat M 7213
$69.95

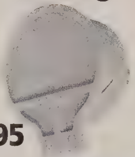
HPM 3-Pin Plugs

10 amp, 3 pin plugs. With collar to hold cable.
Clear Cat M 7002
$4.95



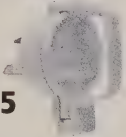
HPM Heavy Duty Mains Plug

10 amp, 3-pin plug with cord entry at rear.
Black Cat M 7001
$6.95



HPM Side Entry Plug

10 amp, 3-pin plug with cord entry at side.
Grey Cat M 7006
$5.95

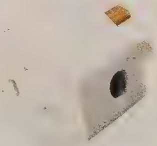


HPM 3-Pin Plug

HPM easy pull 3 pin plug.
Cat M 7003
$7.95

PDL Back Entry 3 Pin Plug

230V 10-amp rated back entry 3 pin plug.
Clear Cat M 7459
$6.50



PDL PDL Piggy Back Plug

White 240V 10A rated plug allows two cords to be run from the same power point.
Cat M 7008
$8.95

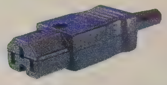
HPM Line Sockets

Clear 10-amp, 3-pin line socket for extension cords etc.
Cat M 7022
$6.95

HPM Surface Socket

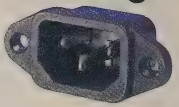
Standard 3-pin surface mountsocket. Rated at 10 amps. White finish.
Cat M 7030
$9.95

IEC Connectors



IEC Female Line Connector

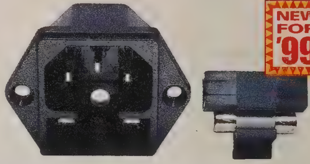
3-pin socket to suit 3-pin IEC plugs as used on computer equipment etc. Rated at 10 amps.
Cat M 7060
$6.95



IEC Male Chassis Connector

Suitable for flush mounting on computer, hi-fi equipment etc. Accepts IEC line socket.
Rated at 6 amps.
Cat M 7066
$4.95

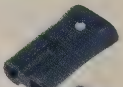
NEW FOR '99



IEC Male Chassis Connector

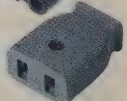
This flush mount connector is 10A rated and includes a fuse holder.
Cat M 7068
$5.95

Keyway Connectors



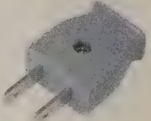
Piggy Back Plug

Socket 2 pin AC dual keyway.
Cat M 7417
$1.25



Socket 2 pin AC Flat

Cat M 7419
$3.95



Plug 2 pin AC Flat

Cat M 7416
$4.25

Mains Testers

Power Point Safety Tester

Just pop it into the power point and the light pattern reveals faults without the danger of shorts or accidents. 240V.
Cat M 7103
$14.95

Light Switches

HPM

Light Switch

Architrave wall plate with a single switch.
Cat M 7038

$9.95

HPM

Single Wall Switch

Standard wall fitting with a single switch.
Cat M 7036

$9.95

HPM

Line Switch

Ideal for standard lamps etc. Simply wires into power cord. Rated at 10 Amps.
Cat M 7056

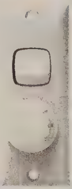
$12.50

Architrave Light Dimmer

Replaces existing light switch with combined dimmer and switch.
Cat M 7058

Limited Stocks

$19.95



HPM

Light Dimmer 300VA

Fits standard wall fitting to replace existing light switch with combined dimmer and switch. With standard wall plate.
Cat M 7087

$39.95

*Product may differ from one shown

HPM

Fuse Wire Handy Pack

NZ fuse wire. Keep a pack in the fuse box just in case! 5, 10, 15 amp.
Cat H 3182
8A, 16A, 20A, 30A
Cat W 3180

$2.50ea

HPM
FUSE WIRE
BRITE-HEAT
FUSE WIRE

Mains Power Points

HPM

4-Way Junction Box

4-way plastic junction box (40A/415V) with screw-down cover.
Cat M 7048

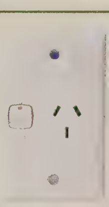
$9.95

HPM

Single Powerpoint

Wall mounted single power point rated 240V, 10A.

Horizontal Cat M 7012	$12.95
Vertical Cat M 7494	$14.95



HPM

Double Vertical Powerpoint

Double wall mounted power point. 240V 10A.
Cat M-7498

$19.95

HPM

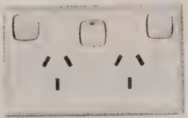
Double Powerpoint

Standard wall-mount double powerpoint with two switches. Rated at 10A 240V. White finish.
Cat M 7032

$19.95

HPM

Double Power Point with Extra Switch

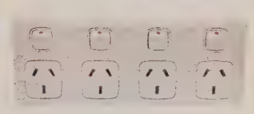


Horizontal double power point with extra switch to operate another appliance. White. 240V 10A.
Cat M 7497

$24.95

HPM

4-in-1 Power Point



Four horizontally positioned power points. Great for replacing existing powerpoints where one or two are not enough.
Cat M 7011

$39.95

Accessories

HPM

Wall Board Clip

Allows flush mounting of wall plate switches, powerpoints etc on cavity walls e.g. plaster, timber (not brick).
Cat M 7040

$2.95

HPM

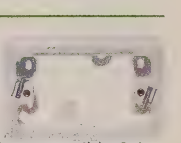
Wall Plate

Blanking plate for standard wall fitting.
Cat M 7046

$6.95

HPM

Mounting Block



For wall mount powerpoints, switches where flush mounting is not possible. Suits standard sized wall plate switches and powerpoints.
Cat M 7042

$6.95

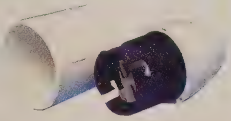
Lamp Holders

HPM

Cord Grip Lamp Holder

Bayonet fitting.
Cat M 7026

$5.45



HPM

Lamp Holder with Switch

Lamp holder fits standard 10A cord and has push-bar switch for standard lamps etc. Bayonet fitting.
Cat M 7027

$9.95

HPM

Lamp Holder

Batten mount for standard Bayonet Cap light bulbs. Fixed position.
Cat M 7029

$9.95

Soldering Irons

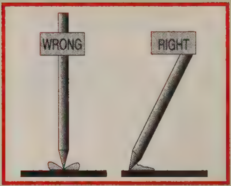
The Easy Way To Solder

For projects and repair jobs, properly soldered connections are a must. But, if you're just starting out in electronics, a little friendly advice will help you get it all together.

ONE: Make sure the surfaces to be soldered are clean. A little dirt or grease (even from just handling components with your bare hands) will make it just that much harder for the solder to attach itself to the connection being soldered. A small file, sandpaper or a wire brush can be very useful for this. When soldering electronic equipment, you should always use resin-cored solder.

TWO: Before you use a new soldering iron for the first time, coat the tip with solder to prevent oxides from forming, then immediately brush off the excess with a soft, damp cloth to form a smooth, silvery soldering surface. This is called "tinning" and should be done periodically to ensure efficient soldering.

THREE: Apply the tapered surface of the iron's tip to the connection, then apply solder (see illustration). Don't use the iron's tip to directly melt solder – let the connection melt it for you. Otherwise you may create a "cold" solder joint – one that is likely to fail later.



FOUR: When solder begins to flow, carefully lift the iron's tip away from the job while keeping the connection stable.

FIVE: When soldering delicate components, work quickly and use a heatsink to draw off damaging heat.

Affordable Quality From Dick Smith Electronics!

Easy-to-use and extremely efficient soldering irons. With 240V operation, 370˚C operating temperature, long-life replaceable tips and lightweight handles. Approved by electrical authorities, they meet Australian Standard number 3114.

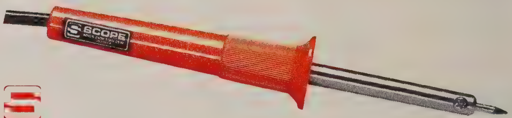
25 Watt	Cat T 2300	$24.95
40 Watt	Cat T 2305	$34.95
80 Watt	Cat T 2315	$44.95
Replacement Tip for 25 Watt 4mm Conical	Cat T 2301	$5.95
Replacement Tip for 40 Watt 5mm Double Flat	Cat T 2306	$5.95
Replacement Tip for 80 Watt 7mm Double Flat	Cat T 2316	$5.95

Safety 25W Soldering Iron

Fitted with a non-burn silicon style mains cable, this special version 25W Hotrod soldering iron is well suited for users such as schools and colleges where safety and ease of use are of prime concern. Supplied with a 4mm plated tip.
Cat T-2303

$44.95

Replacement Tip Cat T 2301 $5.95

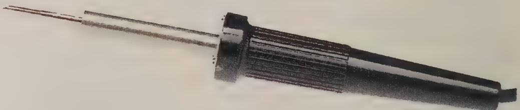


25W Mains Powered

An air-cooled finger grip makes this iron ideal for continuous use. Rated at 25W, 360˚C, it has a long-life earthed tip and barrel for added safety.
Cat T 1619

$34.95

Spares: 4mm Flat Tip Cat T 1623 $9.95



15W Soldering Iron

Ideal for light to medium range soldering work. Rated at 15 watts and mains-powered, it's incredibly efficient with impact and heat resistant handle and replaceable nickel and iron-plated tip. Also features a stainless-steel barrel and ceramic-filled element for long life.
Cat T 1310

$39.95

Pk 2 Spare Tips Cat T 1312 $8.95

Goot Soldering Irons

Goot 40W Soldering Iron

This lightweight highly reliable soldering iron is rated at 40 watts and is ideal for general purpose soldering.
Cat T 1810

$39.95

Replacement Tip Cat T 1811 $5.95

Goot TQ85 Quick Heat Soldering Iron

Has a push button power boost which allows the iron to heat up in seconds. It has a comfortable, lightweight design and the protective plastic shaft cover keeps the iron safe when not in use. 20W when in standard position, 200W while on high power.
Cat T 1356

$79.95

Replacement Tip Cat T 1824 $12.95

Goot TQ77 Quick Heat Soldering Iron

This soldering gun has two power settings. The usual 20W low power can be boosted to 200W by holding down the trigger. This heats the iron to maximum temperature almost 10 times faster than when on the low setting.
Cat T 1828

$79.95

Replacement Tip Cat T 1829 $14.95

5-Piece Soldering Kit

SCOPE
5 PIECE SOLDERING KIT
25W–240V

A great gift for any budding electronics enthusiast, or as a standby repair tool kit. This quality general-purpose soldering iron comes complete with resin-core solder, an iron stand and cleaning sponge, plus two screwdrivers. Rated at 25W 240V.
Cat T1652

$39.95

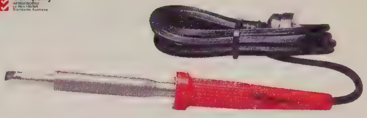
60W Temperature Controlled Iron

A lightweight, 60-watt iron suitable for working on transistors and printed circuits through to heavy electrical connections. The ceramic-filled element provides precise temperature control, minimises heat wastage and has a fast heat and recovery time. With a pre-tinned 'long-life' iron-plated tip.
Cat T 1345

$139

Heating Element	Cat T 1346	**$59.95**
1.58mm Tip 370°C	Cat T 1347	**$15.95**
3.17mm Tip 370°C	Cat T 1348	**$15.95**

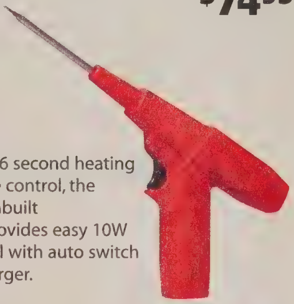
80W Marksman Soldering Iron



For those really heavy jobs, the Weller SP-80D marksman soldering iron won't let you down. It's stainless steel barrel, ceramic heating element and iron plated tip provide fast heat-up and long life. Features easy-to-hold impact resistant handle, and is supplied with a replaceable 9.5mm tip. Australian made.
12 month warranty.
Cat T 1315

$74.95

Scope C60 Cordless Soldering Iron



Based on the Miniscope's fast 6 second heating time and manual temperature control, the Scope C60 cordless iron has inbuilt rechargeable batteries and provides easy 10W to 60W trigger heating control with auto switch off. Includes AC overnight charger.
Cat T 1720

$159

Low Voltage Soldering Irons

Superscope Soldering Iron

For those heavier soldering jobs. Heats up in a fast 6 seconds! With huge 140W capacity, manual temperature control, auto-off function and long-life stainless steel barrel. Complete with spare tip and elements. Requires approx 3-5V at 30A.
Cat T 1605

$79.95

Spare Tip and Element Pack Cat T 1603 **$14.95**

Scope Transformer

This high-quality 30A (intermittant) transformer saves accidental damage to sensitive components by powering various Scope irons at low voltages and is double insulated for extra protection. Comes with an iron rest and tough, polypropylene case.
Cat T 1692

$79.95

12V Soldering Irons

12V 20-40 Watt Soldering Iron

The ideal iron for on-site service and repairs, it's rated at 12V 20-40 watts and is both fast to heat and fast to recover. Comes with interchangeable long-life tip, 2 metre power lead and large insulated battery clips.
Cat T 2100

$27.50

Spare Tips

Medium Chisel	Cat T 2002	**$9.95**
Thick Chisel	Cat T 2004	**$9.95**
Fine Conical	Cat T 2006	**$9.95**

Fast Heating 12V 30-150W Iron

Ideal for outdoor service or repair work! This quality Scope soldering iron heats up in as little as 3 seconds and supplies up to 150 watts with a current drain of 45A and operating time (on a fully charged battery) of approximately 1 hour (at 30W). Comes with six-metre lead and battery clips.
Cat T 1635

$99

Gas Powered Soldering Irons

PENCIL TORCH

Economy Pencil Blowtorch

Great for heatshrink work, silver solder, gold, silver, brazing or glass work. It fits easily in your pocket and is powered by butane gas.
Cat T 1380

$14.95

NIMROD®

Microjet Butane Torch

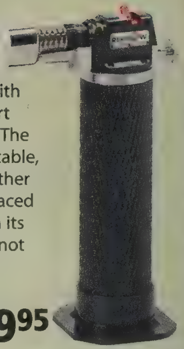
A pocket-sized blow torch that's very cheap to run – just clip in a normal cigarette lighter! With easy auto-ignition, it heats up to 1300°C maximum in an instant. Complete with cigarette lighter.
Cat T 1366

$34.95

Lighter Refill To Suit Microjet Torch
Cat T 1363

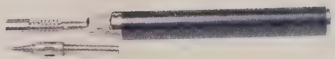
$1.10

Mini Blowtorch



Butane powered with simple push-to-start electronic ignition. The flame is fully adjustable, and the unit can either be hand-held or placed on the benchtop in its stand. (Butane gas not included)
Cat T 1390

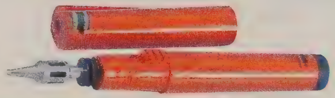
$59.95



Two-in-One Butane Soldering Iron

A large butane powered blowtorch with adjustable flame as well as a soldering iron tip. Maximum blowtorch temperature of 1300°C, and soldering temperature of 400°C.
Cat T 1396

$44.95



Weller/portasol

Butane Soldering Iron

Fits In Your Pocket!

Ideal for service people, handymen and technicians, this medium duty butane powered iron gives up to 60 minutes of continuous use at full power (the equivalent of 60 watts) and is built to last. It provides an adjustable temperature control from 10 to 60 watts (400°C maximum). Supplied with a long life soldering tip.
Cat T 1370

$59.95

NEW FOR '99

Weller

Pyropen Junior Soldering Iron

Quality butane powered soldering iron with 1mm iron-plated tip, Piezo ignition, adjustable power control (approx 15-60W), 30 second heat up time and up to 60 minutes operation per recharge. Includes hot blower tip and protective cap.
Cat T 1425

Available September

$119

Weller
portasol P-1K
CORDLESS, REFILLABLE, BUTANE GAS POWERED SOLDERING TOOL KIT

Weller/portasol

'Pocket' Soldering System

4 Tools In One!

This patented Portasol P-1K kit includes a butane powered soldering iron plus blow torch, hot blower and hot knife tips all in a handy storage case. With the equivalent of 10-60 watts of power and temperature adjustment up to 400°C for soldering and 1200°C for blowtorch use, it's ideal for the hobbyist, handyman or professional technician. Heats up within 40 secs to soldering temperature.
Cat T 1374

$124.95

Accessories

1.0mm Soldering Tip Cat T 1375	$21.50
2.4mm Soldering Tip Cat T 1378	$21.50

Weller/portasol

PSI-100K Portasol Kit

The PSI-100K is a rugged, professional use butane-powered soldering iron, complete with a range of tips, all packed in a solid plastic case. Applications include soldering, heatshrinking and rope cutting. Features include a large butane reservoir, allowing up to 2 hours operating time, as well as an Auto Switch safety shutoff, iron plated tips, and an in-built fuel filter.
Cat T 1398

$169

Accessories

1.0mm Soldering Tip Cat T 1397	$26.95
2.4mm Soldering Tip Cat T 1399	$26.95

RONSON Multi-Fill
BUTANE FUEL INJECTOR
RONSON Multi-Fill
BUTANE FUEL INJECTOR
DICK SMITH ELECTRONICS

A. Ronson Butane Gas
30g
Cat N 1082

$4.50

B. Ronson Butane Gas
100g
Cat N 1081

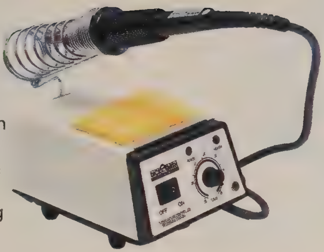
$8.95

C. DSE LPG Refill
150g
Cat N 1085

$9.95

Ideal for butane powered soldering irons, cigarette lighters, or any butane fuelled devices. Flammable.

Temperature Controlled Soldering Station



Affordable quality for the technician or enthusiast. This new soldering station provides fully variable temperature control from approx. 250˚C to 450˚C, plus zero voltage crossing circuitry for low noise, making it suitable for a wide range of soldering applications. It features a lightweight soldering pencil with heat-resistant cable, iron holder and tip cleaning sponge, and is fully Energy Authority approved. Supplied with a long-life 1.6mm plated tip.

Cat T 1975

$129

Due September '99

0.8mm Chisel Tip	Cat T 1977	1.6mm Chisel Tip	Cat T 1978
3.2mm Chisel Tip	Cat T 1979		**$9.95ea**

The DSE Soldering Station

Features variable temperature control (200°-500°C), a large temperature meter, and has Energy Authority approval. Includes a lightweight iron, fitted with a silicon non-burn cable, iron holder, cleaning sponge, a medium chisel tip and an instruction manual.

Cat T 2000

$169

Accessories To Suit

Description	**Cat No**	**Price**
Tip Medium Chisel	Cat T 2002	**$9.95**
Tip Thick Chisel	Cat T 2004	**$9.95**
Tip Fine Conical	Cat T 2006	**$9.95**
Element and Barrel	Cat T 2008	**$39.95**
Sponge Replacement	Cat T 2010	**$2.95**

Surface Mount Accessories For DSE Soldering Station

Description	**Cat No**	**Price**
Surface Mount Device Adaptor		
Adaptor to suit SMD and Desoldering Tips	Cat T 2042	**$9.95**
Desoldering Tips		
23 x 17mm Box Type	Cat T 2030	**$26.95**
7 x 12.5mm Tunnel Type	Cat T 2031	**$26.95**
6 x 10mm Tunnel Type	Cat T 2032	**$26.95**
6 x 5mm Tunnel Type	Cat T 2033	**$26.95**
IC and IC Socket Remover		
8-pin	Cat T 2034	**$26.95**
16-pin	Cat T 2035	**$26.95**
18-pin	Cat T 2036	**$26.95**
24-pin	Cat T 2037	**$26.95**
Soldering Blade Tips and SMD Removers		
10mm Large	Cat T 2038	**$12.95**
5mm Small	Cat T 2039	**$12.95**
2.1 x 1.5mm Small	Cat T 2040	**$12.95**
3.2 x 1.5mm Large	Cat T 2041	**$12.95**

Weller WTCPS Soldering Station

Weller is the first choice of many hobbyists, technicians and service people. Design features such as its non-burning silicon rubber cable, long-life iron-plated tips, lock slots on both sides of the soldering iron stand and wick-fed tip-cleaning sponge make Weller a name you can trust! The heating element (48W max) operates from an internal 24V transformer. Supplied with a 370˚C screwdriver tip as standard

Cat T 3000

$249

Spare Tips

1.6mm Spade (370°C)	Cat T 3020	**$14.95**
1.6mm Screwdriver (370°C)	Cat T 3003	**$14.95**
1.6mm Screwdriver (430°C)	Cat T 3004	**$14.95**
2.0mm Long S/driver (370°C)	Cat T 3016	**$14.95**
2.4mm Screwdriver (315°C)	Cat T 3021	**$14.95**
2.4mm Screwdriver (370°C)	Cat T 3022	**$14.95**
3.2mm Screwdriver (430°C)	Cat T 3026	**$14.95**

Description	**Cat No**	**Price**
Spare Sponge	Cat T 3010	**$5.95**
Power Unit	Cat T 3018	**$169**
Handle Assembly	Cat T 3019	**$169**

HAKKO

936 Soldering Station

Well known in the professional service industry, this high-quality general-purpose soldering iron delivers superb performance! Uses an accurate manual temperature control with ceramic heater sensor and zero-crossing heater switch systems. It's rated at 60W 24V AC and has an operating temperature of 200-480°C with super-quick heat-up and fast thermal recovery times. The iron comes complete with holder, cleaning sponge, tip and sponge tray.

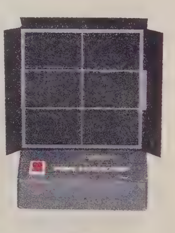
Cat T 3810

$269

Tips to suits

Description	**Cat No**	**Price**
17mm, 0.5mm conical	Cat T 3802	**$14.95**
25mm, 0.2mm conical	Cat T 3804	**$18.95**
17mm, 1.6 x 0.5mm flat	Cat T 3806	**$14.95**
17mm, 2.4 x 0.5mm flat	Cat T-3808	**$14.95**

Fume Extractor/Filter



At last, an affordable Fume extractor/filter to reduce fumes generated while soldering. Encased in strong metal, this 240V mains powered unit is placed next to the soldering activity where it draws fumes through a carbon filter and directs them elsewhere. Includes 2 filters and IEC-style mains lead.

Due September '99

T 2550

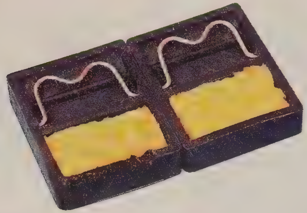
$129

One-Shot Desoldering Tool

Desolder joints with this one-shot 60W portable tool. This 240V-powered unit uses a vacuum pump, provides electronic temperature control and a heater element to reduce static. Includes solder filters, high-temperature tweezers and stand.

T 2500

$199



Mini Soldering Iron Stands

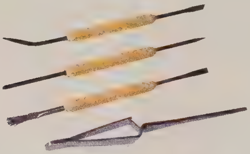
A set of 2 pcs mini stands for use with small soldering irons. Complete with sponges for tip cleaning.
Cat T 1309 **$5.95**

Soldering Iron Stand

A budget, lightweight soldering iron stand which makes working with your soldering iron that little bit easier. Comes with sponge.
Cat T 1303 **$14.95**

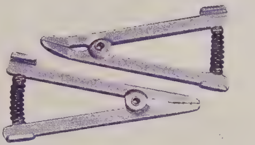
Quality Iron Stand

A well-balanced and sturdy soldering iron stand with a heavy cast iron base,so you can't knock it over easily. Comes complete with solder sponge.
Cat T 1305 **$19.95**



Soldering Aid Set

Includes a fine-point and slotted end probe, scraper end and wire brush probe, angle scriber and scraper probe, aluminium heatsink and 170mm tweezers.
Cat T 2606 **$9.95**

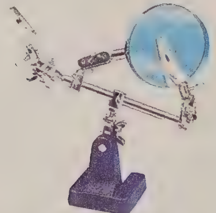


Heatsink Clip Set

Spring loaded, plier grip clips for heat sensitive components and leads. Made of aluminium for high thermal conductivity, 2 types (one straight, one angled), both are 75mm long.
Cat T 2620 **$11.45**

Solder Roll Holder/ Dispenser

Holds a standard solder reel and allows you to feed the solder through the guide. The heavy base stops it moving around the bench and the handle lets you carry it easily.
Cat T 1295 **$24.95**



PCB Work Station

It's bargain priced and makes working on PCBs much easier! Includes a heavy cast iron base for added stability, a magnifying glass, and alligator clips to hold the PCB still while you're working on it.
Cat T 5715 **$16.95**

Visor Magnifier

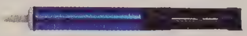
This lightweight visor simply slips onto your head and you flip it down when a magnified view is required. Has selectable 2.2x and 3.3x magnification.
Cat T 4593 **$34.95**

Multi-Angle Metal Vice

Beautifully crafted metal vice suitable for a variety of hobby uses. It mounts to a bench up to 50mm thick, has jaws with rubber covers 75mm wide that open apart up to 55mm. Made from diecast aluminium alloy.
Cat T 4742 **$44.95**

'Vacu-Bulb' De-Soldering Tool

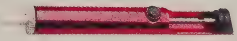
A quality de-soldering bulb with a Teflon Tip, for easy de-soldering and removal of excess solder. The fluorocarbon material used in the tip means it won't scratch or damage delicate PC boards.
Cat T 2581 **$7.95**



De-Soldering Tool

Ideal for reworking jobs and the removal of solder from electronic circuit components. Designed for easy one-hand use, its tip and barrel are fully removable for easy cleaning.
Cat T 2561 **$12.95**

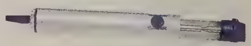
Replacement Tip
Cat T 2562 **$1.95**



De-Soldering Pump

A handy, small sized de-soldering tool for repairing PCBs and other delicate work. It's lightweight and easy to use with a removable teflon tip.
Cat T 2563 **$15.95**

Replacement Tip
Cat T 2564 **$3.95**



De-Soldering Tool

With anti-static Teflon tip! Lightweight and easy to use, this medium sized tool allows one-hand operation while removing solder from electronic circuits etc. It's easy to clean with an anti static Teflon tip and metal barrel.
Cat T 2567 **$19.95**

Replacement Tip
Cat T 2568 **$5.95**

Flux-Cored 60/40 Solder

General-purpose electronics grade flux-cored 60/40 (Tin/Lead) solder suitable for most projects and repair work. Available in rolls or economical hobby packs.

Hobby Tubes:

0.8mm (17g)	Cat N 1639	$3.95 ea
1.0mm (17g)	Cat N 1637	

100 gram rolls

0.56mm	Cat N 1627	$7.95 ea
0.90mm Savbit	Cat N 1629	

200 gram rolls

0.71mm	Cat N 1623	$14.95 ea
0.91mm	Cat N 1621	
1.25mm	Cat N 1619	

General Purpose 5-Core

40/60 (Tin/Lead) solder with non-corrosive flux core suitable for electrical and general purpose applications. Comes in a 1.4mm x 14g pack.
Cat N 1634 **$5.95**

95/5 Tin Antimony Solder

Lead-free, non-toxic, acid-cored solder perfect for soldering copper, brass, tin, and jewellery. Not suitable for electrical or aluminium work. 1.4mm x 7 grams.
Cat N 1624 **$5.45**

Solder Paste

This 96/4 (Tin/Silver) solder is lead-free and ideal for most metals including stainless steel. Not recommended for electrical/ electronics use. Comes in 7 gram syringe.
Cat N 1644 **$12.50**

Lead-Free Solder

Designed as a substitute for tin/lead cored solder. This solder is a 99.3% tin,0.7% copper alloy. It has a melting point of 270°C and a 0.71mm diameter. 200g roll.
Cat N 1628 **$14.95**

Aluminium Solder

Alu-Sol is an aluminium-based solder used for joining aluminium, most alloys and dissimilar metals. Requires no additional flux or surface preparation. 1.6mm x 100g roll.
Cat N 1625 **$16.95**

Tip Tinner & Cleaner

A fast and efficient method of cleaning and re-tinning soldering iron tips. 15g tin.
Cat N 1648 **$12.50**

Multicore Tubes

A handy size to take anywhere. 9g x 0.7mm.
Cat N 1701 **$5.95**

Handy Roll

Multi pupose solder on a roll. 49g x 0.7mm.
Cat N 1705 **$9.95**

Multicore Solder Savbit

0.71mm x .25kg	Cat N 1711	$18.95
0.91mm x .25kg	Cat N 1710	$18.95
1.20mm x .25kg	Cat N 1709	$18.95
0.71mm x .5kg	Cat N 1716	$27.50
0.91mm x .5kg	Cat N 1715	$27.50
1.20mm x .5kg	Cat N 1714	$27.50
1.63mm x .5kg	Cat N 1713	$27.50

Non-Toxic Solder

The perfect solder for schools. Non-toxic means safe handling for anyone.
0.91mm x .5kg
Cat N- 1725 **$27.50**

Solder Aids

Hakko Wick De-Soldering Braid

HAKKO WICK
HAKKO WICK
HAKKO WICK

Works at lower temperature than conventional types and uses an odourless, non-corroding flux to eliminate cleaning after de-soldering.

Description	Cat No.	Price
1.5m x 1.3mm	Cat N 1810	$5.25
1.5m x 2.0mm	Cat N 1812	$5.45
1.5m x 2.5mm	Cat N 1814	$5.75

Chem-Wik Lite De-Soldering Braid

1.5m roll x 1.9mm (green)	Cat N 1680	$5.45 ea
1.5m roll x 2.5mm (blue)	Cat N 1681	

Ersin Wick Braid

2.7mm x 9m Cat N 1685 **$6.95**

Nimrod Microwick

2m roll x 3.0mm
Cat N 1800 **$5.95 ea**

Tapes

Cling Tapes

If you want it to stay put, you need Cling! Our wide range has a Cling tape for every purpose.

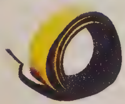
Waterproof Cloth Tape 24mm x 4.5M	Cat N 1504	$3.95
Hook & Loop Strips	Cat N 1524	$4.95
D/sided Indoor 12mm x 2M	Cat N 1380	$5.95
D/sided Indoor 24mm x 2M	Cat N 1384	$7.95
D/sided Outdoor 12mm x 5M	Cat N 1382	$11.95

U.S. Gaffa Tape

Black 10M	Cat N 1398	$8.95
Silver 10M	Cat N 1408	$8.95
Silver 20M **New**	Cat N 1432	$16.95
Black 20M **New**	Cat N 1430	$16.95
Black 40M **New**	Cat N 1431	$28.95
Silver 40M **New**	Cat N 1433	$28.95

U.S. gaffa cloth tape

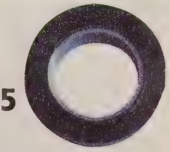
Cling Felt Tape



48mm x 1m
Cat N 1375 **$9.95**

LIMITED STOCKS

Cling Amalgamating Tape 2m Roll



Cat N 1376 **$9.95**

Flame Retardant Coloured Insulation Tape

Hard-wearing coloured insulation tape. 19mm x 18m rolls.
Six colours to choose from:

White	Cat N 1358	$1.95 ea
Red	Cat N 1361	
Orange	Cat N 1360	
Black	Cat N 1362	
Brown	Cat N 1363	
Blue	Cat N 1364	
Green	Cat N 1383	

FLU
ULS
FRE
EAD
EMS
AFC
ECSP
ULS
EPE
E

ELECTROLUBE®

Tamper Lacquer

(Green)
Bloc'Lube is a one part, air drying seal for screws, nuts, tuneable items and other "factory fixed" components where tamper evidence is required. Tack free after 10min, remains flexible for up to 24 hours. After this time the seal will become brittle. 15ml.
Cat N 1210 **$7.50**

Plus 2X Contact Lubricant

Significantly increases contact performance and life, ensuring reliability and low contact resistance. 5ml pen
Cat N 1047 **$9.95**

Multi-Purpose Grease

Lubricating grease for a wide range of electrical and mechanical applications.
50ml tube
Cat N 1132 **$12.95**

Anti-Static Foam Cleanser

Anti-static foaming cleanser for surfaces prone to static dust attraction. Specially developed for use on plastics, metal, glass and other synthetic surfaces.
200ml aerosol
Cat N 1145 **$12.95**

Permagard

A multi-purpose maintenance fluid that dries out damp electrical connections, penetrates corroded parts, lubricates & protects metal surfaces and frees seized parts.
200ml aerosol
Cat N 1120 **$14.95**

Clear Protective Lacquer

A protective coating to keep out harmful salt, dust and moisture. Can be soldered through for easy repairs. 200ml aerosol
Cat N 1130 **$19.95**

Electronic Cleaning Solvent

Provides a fast-drying, non-toxic and non-flammable cleaning solvent for use on delicate electronic components.
200ml aerosol.
Cat N 1041 **$19.95**

Contact Cleaner Lubricant

Cleans and lubricates electrical contact surfaces, restoring operation and ensuring long life by maintaining low, stable contact resistance. 200ml aerosol.
Cat N 1118 **$19.95**

Air Duster

For removal of dust and airborne contamination from very delicate or inaccessible areas of electrical and electronic equipment. Ideal for computers, cameras and hi-fi equipment. 200ml aerosol
Cat N 1151 **$24.95**

Ultrasolve Non-CFC Cleaning Solvent

For quick and efficient cleaning of electrical contacts, computers, precision instruments, cameras, etc. Excellent for removing greases, oils, flux residues and acrylics Conformal Coatings from PCBs.
200ml aerosol
Cat N 1170 **$14.95**
400ml aerosol
Cat N 1172 **$26.95**
Note: This solvent is flammable.

Fluxclene

A fast-drying aerosol solvent for removing contaminants and flux after soldering. Ozone friendly. 400ml.
Cat N 1112 **$24.95**

Isopropanol Cleaning Solvent

Internationally-approved cleaning solvent. Rapid drying 99%-pure Isopropanol, it's safe to use on most plastics.
400ml aerosol
Cat N 1095 **$26.95**

Everything You Need For Making & Repairing PCBs

Includes easy-to-follow instructions.

A. Technical Design PCB Kit #1

With 2 x pre-sensitised PCBs, knife, developer, 8 x donut pad sheets, 3 x PC artwork tapes & 4 x DIP pattern sheets.
Cat N 5981 **LIMITED STOCKS AVAILABLE** **$22.95**

B. Technical Design PCB Kit #2

With PCB template, 2 x pre-sensitised PCBs, knife, developer, 8 x donut pad sheets, number & alphabet kit, keypad patterns, T.O. transistor patterns.
Cat N 5982 **LIMITED STOCKS AVAILABLE** **$29.95**

C. Technical Design PCB Kit #3

With 2 x PCB templates, 2 x pre-sensitised PCBs, knife, developer, 10 x donut pad sheets, number & alphabet kit, keypad patterns, TO transistor patterns.
Cat N 5983 **$39.95**

ACTION MARKER Fine Line

Direct Etch Pen

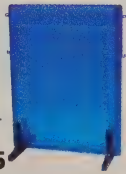
The pen is filled with a lacquer ink which is impervious to aqueous PCB etch solutions. Ideal for touch-ups or direct etch boards.
Cat N 5181 **$9.95**

circuit works conductive pen

Circuit Works Conductive Pen

Silver based pen ideal for electronic design, prototype and repair applications. Use Circuit Works to link components, repair defective traces and Shield delicate electronics. Dries in minutes, solderable at low temperatures. 8.5g Pen.
Cat N 5184 **$32.95**

PCB Bubble Etching Tank



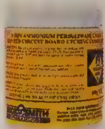
Ideal for PCBs up to 20 x 25cm in size and has PCB clips for easy handling. Suitable for etching single and double sided PCBs Use with an optional air pump and heater (not supplied) for fast and efficient etching.
Cat N 5988 **$79.95**
Air Pump for Bubble Etching Tank
Cat N 5987 **$14.95**

Positive Photo Resist PCB

Includes 2 PCB's. Sizes: 100 x 80mm & 80 x 50mm. Suitable to use with Technical Design PCB Kits.
Cat N 5985 **$9.95**

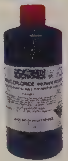
Ammonium Persulphate

LIMITED STOCKS AVAILABLE



Special long-lasting compound for use when etching PCBs. 600g.
Cat N 5654 **$16.95**

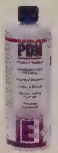
Ferric Chloride Etchant



Supplied in a handy 500ml no-spill bottle of working solution (ferric chloride). No hassles with beads and hot water.
Cat N 5652 **$24.95**

Note: Due to the chemical composition of N 5652 and N 5654, transport restrictions may apply.

Electrolube Developer



It's safer & simpler than mixing caustic solution. Simply develop your pattern in this, dry and etch. 250ml/300g bottle of 4:1 concentrate.
Cat N 1002 **$19.95**

CRC
5·56
SILICONE SPRAY
2-26
SWITCH CLEANER LUBRICANT
LECTRA CLEAN
CO VIDEO CLEANER
CO CONTACT CLEANER
CONTACT 2000
FREEZE SPRAY

CRC 5.56

CRC 5.56 Multi-Purpose Product has superior penetrating power that breaks through rust and corrosion while it clears away scale and dirt. Eliminates the need for many disassembly operations. Lubricates for smooth action, and silences annoying squeaks and squeals. Protects metals against corrosion and displaces moisture to help start wet engines.
Cat N 1066 **$9.95**

808 Silicon Spray

Gives a durable, odourless film that revives, lubricates, waterproofs and protects. ideal for use on all metal, plastic, rubber, fabric, wood and painted surfaces. 330g can.
Cat N 1064 **$14.95**

CRC 2-26 Lubricant

Improves motor generator winding insulation resistance, protects against high humidity, improves electrical properties, displaces moisture, loosens corroded nuts, bolts, etc, lubricates and protects. 300g.
Cat N 1062 **$16.95**

Switch Clean/Lube

Cleans away oil, grease, dust and atmospheric contaminants. 300g spray can.
Cat N 1074 **$19.95**

Lectra Clean

CRC Lectra Clean is an unique, scientifically formulated cleaner and degreaser that effectively removes moisture, grease, oil, wax, dirt and other contaminants form motors, parts and other electrical/mechanical equipment. No flash point. No fire point.
Cat N 1063 **$19.95**

Video Cleaner

Great for cleaning audio and video heads. Non-staining and non-corrosive. Suitable for use on all components with no effects. 200g.
Cat N 1057 **$22.95**

CO Contact Cleaner

Plastic, safe formula harmless to most plastics. 100% free of CFCs. Evaporates rapidly and completely. 350g spray can. Flammable.
Cat N 1072 **$24.95**

CRC Contact Gold

CRC Contact Gold is a high grade lubricant and protective grooming agent for all metal coated contacts, pin connectors and switches. CRC Contact Gold is a medium viscous lubricant and protective agent on a synthetic basis. It improves the durability and sliding ease during connection and disconnection of plug-type connectors. The friction between thin metal layers is reduced. Particularly suited for surfaces coated with Gold, Silver, Rodium, Palladium and other noble metals.
Cat N 1090 **$26.95**

CRC Contact 2000

CRC Contact 2000 Precision Electronic Cleaning Solution has been specially developed as an effective alternative to CF 113 based cleaners. CRC Contact 2000 is chemically inert, non flammable, has thermal stability with rapid and complete evaporation. Contains no lubricants, CFC's or Methyl Chloroform. CRC Contact 2000 removes light contaminants, atmospheric oils, dust and lint from precision electrical/electronic equipment. Leaves no residue to increase resistance. Safe on most plastics.
Cat N 1089 **$29.95**

CRC Freeze Spray

CRF Freeze Spray is a multi-purpose dry coolant spray for maintenance trouble-shooting and repair. Use it to isolate circuits or components while testing for heat-induced failures, to protect sensitive components from high temperatures during soldering and de-soldering and to aid in the assembly of tight fitting mechanical parts and help locate hair-line cracks in PC Boards. 300g can.
Cat N 1239 **$24.95**

Air Brush

Safely remove dust and lint from all delicate precision equipment. Safe to use and non-corrosive or flammable. Leaves no residue or condensation. 200g can.
Cat N 1238 **$24.95**

DSE Aerosols

POISON
Contact Cleaner
Air Jet Spray
Freeze Spray

DSE Contact Cleaner

Contact cleaner for electronics, PC boards, television, computers etc. Not suitable for some plastics.
Cat N 1197 **$17.50**

DSE Lubricant

Lubricant for PC boards, cameras, computers, telephones. 300g can.
Cat N 1196 **$17.50**

DSE Freeze Spray

Instantly cools small components for detecting faults. 250g can.
Cat N 1190 **$19.95**

DSE Air Jet Spray

Removes dust and lint from electrical equipment. 250g can.
Cat N 1195 **$19.95**

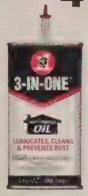
Lubricants

WD-40

WD-40
HANDICAN

Lubricates, displaces moisture, penetrates, protects and cleans! A favourite stand-by for drying out and protecting car ignition systems. 255g spray.
Cat N 0104 **$6.50**
60g Handican spray
Cat N 0105 **$4.95**

3 in 1 Oil Multipurpose Oil



A handy multi-purpose oil which lubricates, cleans and prevents rust.
Cat N 0102 **$4.95**

Adhesives

Hobby Glue 50ml

A clear adhesive, for wood, glass, metal, leather, fabric, paper and most plastics*. (test plastic first)
Cat N 1229 **$5.95**

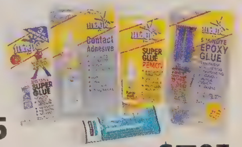
Adhesives

Silastic 732RTV

Adheres to seals and insulates rubber, wood, glass, metal plastic, etc. Acid curing, in a 150g tube.

Clear	Cat N 1227	$9.95
Black	Cat N 1230	$9.95
White	Cat N 1231	$6.95

Super Glue



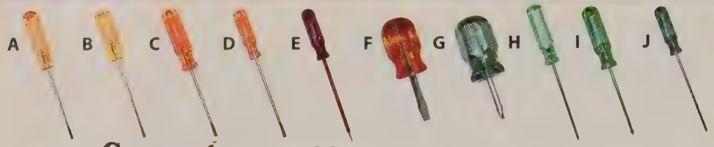
3ml tube
Cat N1217
$3.95

10ml bottle Cat N 1219 **$7.95**

Loctite Quicktite Super Glue Gel and Liquid

LOCTITE
QUICKTITE

3g gel Cat N 1201 **$4.50**
5ml liquid Cat N 1202 **$4.95**



Quality Crescent Screwdrivers

A screwdriver for every job. Each one has precision-ground sand-blasted tips for greater accuracy. Plus, they're made of rust-resistant tempered chrome-vanadium steel alloy and have moulded full-size oil and solvent-resistant handles.

Size mm	Description	Cat No.	Price	Size mm	Description	Cat No.	Price
A. 3 x 75	Flat screwdriver with pocket clip	T 6302	**$3.95**	**F.** 6 x 40	Flat stubby screwdriver	T 6300	**$5.95**
B. 4 x 100	Flat blade	T 6304	**$3.95**	**G.** 40	Philips stubby #2	T 6312	**$8.95**
C. 5 x 100	Flat blade	T 6306	**$5.95**	**H.** 75	Philips #0	T 6314	**$4.95**
D. 6 x 150	Flat blade	T 6308	**$7.95**	**I.** 100	Philips #1	T 6316	**$7.95**
E. 5 x 150	Insulated flat blade	T 6310	**$6.95**	**J.** 150	Philips #2	T 6318	**$9.95**

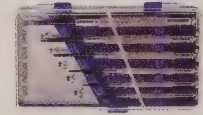
Mini Screwdrivers

They're tiny! Just the thing for models, turntable cartridges etc. Approximately 30mm long shaft. Made in Japan.

Flat Blade:	Cat T 6010
Philips:	Cat T 6015

$1.95ea

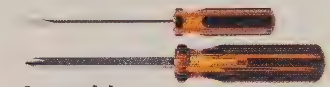
Precision Screwdriver Set



A well-made set with both Philips and flat-head screwdrivers. Each has a free-running top and they're presented in a handy plastic storage box with a transparent lid for easy identification. Contains - Philips head: 2.4 & 3mm. Flat Blade: 0.9mm, 1.2mm, 1.8mm & 3.5mm.

Cat T 4360

$5.95



Screwdrivers

Flat Blade	3.2mm x 75mm	Cat T 6030
Philips	5mm x 75mm	Cat T 6015

$1.95ea

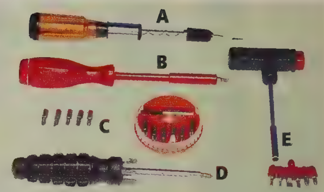
PHILIPS

Neon Test Screwdriver

A must when you're working around live mains conductors. Flat-bladed insulated screwdriver fitted with neon indicator. Operates from about 90V (AC or DC). With convenient pocket clip. Made in Germany.

Cat T 4005

$7.95



A. Push-Action

Makes fixing or removing screws easy! With clockwise, anti-clockwise and fixed direction selection. 6mm and 4mm flat heads, Nos 1 and 2 Philips and two-hole reamers (2mm and 2.8mm). Bits store in the handle.

Cat T 4512

$9.95

B. Magnetic Screwdriver Set

A fully insulated, magnetic-head screwdriver set with six bits that store in the handle. With 4.5mm and 6mm flat blades, Nos 1 and 2 Philips head and Nos 1 and 2 Pozidrive.

Cat T 4505

$9.95

C. Universal Bit Set

For manual or electric screwdrivers! With Philips Nos 1 and 2, flat 4.5mm and 7mm, Pozidrive Nos 1 and 2. Includes driver shaft.

Cat T 4518

$6.95

D. 5-Bit Screwdriver

Large rubber handle for added grip! With flat blades (1.2mm x 6, 6.5 and 7mm) and Philips heads Nos 1 and 2. Bits fit into handle. Made from quality chrome-vanadium steel.

Cat T 4500

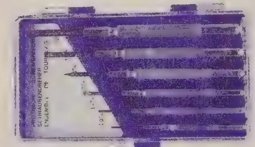
$9.95

E. T-Bar Magnetic

Made from chrome-vanadium steel with a T-bar handle for good grip. Comes with six magnetic bits - 2 Philips, 2 flat blades and 2 Torx bits. Bits are stored in plastic holder.

Cat T 4515

$9.95



High Quality Precision Screwdriver Set

A flat-blade screwdriver set with blades made of Nickel Chrome Molybdenum alloy steel for greater strength. Supplied in a convenient plastic storage case. Blade sizes of 1.0mm, 1.4mm, 2.0mm, 2.4mm, 3.0mm and 3.8mm.

Cat T 4364

$8.45

Crescent Screwdriver Set

Pack of four quality screwdrivers with precision-ground sand-blasted tips. All boast rust-resistant tempered chrome-vanadium steel alloy and moulded full-size oil and solvent resistant handles.

Cat T 6130

$19.95

With Neon Tester! Electrician's Screwdriver Set

Insulated to 1000 volts! This 8-piece screwdriver set includes a neon tester making it ideal for electricians or anyone working with high voltages. It contains: Flat Blade: 6 x 150mm, 5 x 125mm, 4 x 100mm 4 x 95mm and2.5 x 75mm, plus Philips head (Numbers 0, 1 & 2).

Cat T 4390

$19.95

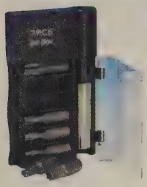
Fully-Insulated! Holding Screwdriver Set

High-quality 5-piece screwdriver set that's fully insulated from handle to shaft end. The specially-designed head 'holds' the screws so you don't drop them into awkward places. With 3 flat blades; 5 x 150mm, 4 x 125mm, 3 x 125mm, and two Philips head (Numbers 1 and 2).

Cat T 4395

$24.95

Torx Screwdrivers

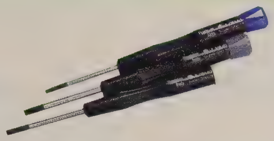


7-Pce Security Torx Screw-driver Set

Emergency kit for computer and appliance servicing. This pocket sized set provides 6 bits and an adaptor which acts as the handle of a screwdriver. Bit sizes are T10, T15, T20, T25, T30, T40.

Cat T 4504

$9 95

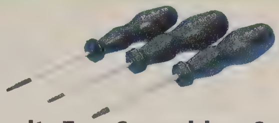


Torx Screwdriver Set

A handy set of 3 small Torx screw-drivers with swivel-headed caps, and tough nickel chrome molybdenum steel shafts plus black oxided tips for greater durability. Sizes T6, T8, T10.

Cat T 6138

$14 95



Security Torx Screwdriver Set

Medium sized security torx screwdrivers with strong 60mm shafts, easy-to-grip moulded handles and black oxided tips. Set includes a wall-hanging holder for each screwdriver. Sizes T8, T10, and T15.

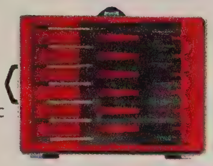
Cat T 6139

$17 50

7-Piece Torx Screwdriver Set

A set of 7 Torx screwdrivers with strong 50mm alloy shafts and black oxided tips, all in a convenient plastic storage case. Sizes T6, T7, T8, T9, T10, T15, T20.

Cat T 6140



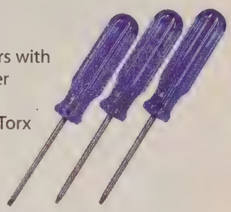
$26 95

Crescent 3-Piece Torx Screwdriver Set

Quality Crescent brand Torx screwdrivers with long shafts and large handles for greater leverage. Suitable for computer and appliance servicing, or wherever larger Torx screws are typically used. Sizes T10, T15, T20.

Cat T 6132

$36 95



Electronic Screwdrivers

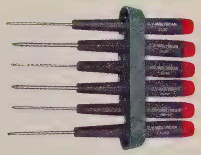
Electronics Screwdriver Set

Especially long, very fine screwdrivers that are ideal for getting into those tight spots you often find while working with electronics. With 6 screwdrivers including:
Philips Head: 2.5 x 75mm, 3 x 100mm, 3 x 150mm.
Flat Blade: 2.5 x 75mm, 3 x 100mm, 3 x 150mm.

Cat T 3540

$14 95

6-Piece Electronics Screwdriver Set with Stand



Six screwdrivers and a handy stand. The set comprises 140mm extra-fine screwdrivers with free-running heads and specially-hardened tips for years of service. With flat blades; 1.5 x 50mm, 2 x 50mm, 2.5 x 50mm and 3 x 50mm.
Philips head; No's 00 x 50mm and 0 x 50mm.

Cat T 3510

$16 95

15-Piece Screwdriver Set

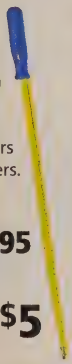
A handy collection of small screwdrivers for the electronics enthusiast. Includes 4 flat-blade drivers (1.4, 1.8, 2.4, 3.0mm), 3 Philips heads (No's 00, 0, 1), 3 hex bar drivers (1.5, 2.0, 2.5mm) and 5 Hex nut drivers (3.0, 3.5, 4.0, 4.5, 5.0mm). Complete with plastic storage case.

Cat T 4370

$19 95

Adjusters/Alignment Tools

Screwdriver-Type Alignment Tools



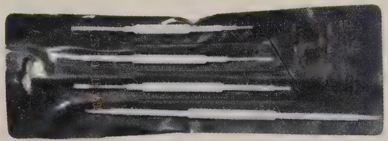
Plastic screwdrivers with steel spring tips. Suitable for adjusting trimmers and IF transformers.

150mm Shaft
Cat T 4522

$3 95

200mm Shaft
Cat T 4520

$5

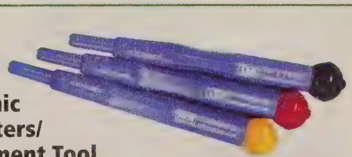


Alignment Tool Set

Aligning your TV or receiver? No more searching for the right tool for the job! This versatile set designed especially for alignment applications comprises four general purpose plastic tools created to cover virtually all shapes and sizes of cores. These easy-to-use, lightweight and economically priced tools will suit hex cores 1.5 to 2.5mm. Outstanding value.

Cat T 4540

$6 95



Ceramic Adjusters/ Alignment Tool

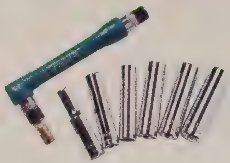
You'll find these high-quality adjusters perfect for computers, communication instruments, VCR, CD and other electronic devices. They're made from a combination of high-tech materials with zirconia ceramic blades and anti-static handles. Plus, they're non-conductive, non-magnetic, non-static and long-lasting.

0.9mm Flat	Cat T 5200	1.3mm Flat	Cat T5202
1.8mm Flat	Cat T 5204	2mm Flat	Cat T 5206
#0 Philips	Cat T 5208		

$9 95 ea

10-Piece Bit Set & Right Angle Driver

Durable and great value. Supplied with 10 bits. Includes Flat, Philips, Torx, and Pozidrive bits.
Cat T 4507 **$\$12^{50}$**



6-Pce Socket Set & Right Angle Driver

A choice of 6 sockets with a right angled driver. Includes 6, 7, 8, 9, 10, 11mm sockets
Cat T 4509 **$\$14^{95}$**

10-Piece Bit Set And Flexible Shaft

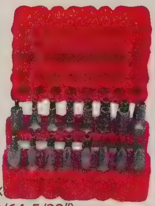
Featuring a range of 10 quality bits, with a flexible shaft to reach places others can't.
Cat T 4508 **$\$16^{95}$**

20pc Bit Set & Ratchet Driver

Has a ratchet driver handle, magnetised bit holder, 20 bits and a handy storage case. Bits include Flat blade (3, 4, 5, 6mm), Phillips (No 4, 5, 6), Hex (No's 4, 5, 6), 1/4" shaft adaptor and Hex nut sockets (5, 6, 7, 8, 9, 10, 11, 12, 13mm).
Cat T 4502 **$\$22^{95}$**

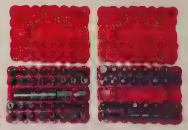
Driver & 28-Piece Bit Set

Consists of a strong driver handle with magnetised tip, 28 various bits, and a handy storage case. Bit include Flatblade (3, 4, 5mm), Phillips heads (No's. 1, 2, 3), Hex (No's 2, 2.5, 3, 4, 5, 5.5, 6), Square (S0, S1, S2, S3), Security Torx (T7, T8, T9, T10, T15, T20, T25, T30, T40), as well as a 1/4" adaptor and hex nut socket.
Cat T 4503 **$\$26^{95}$**



32pc Security Bit Set

A bit set for use with equipment with security screws. Bits include Torx set bits (No's 6, 8, 10), security Hex bits (2, 2.5, 3, 4, 5, 6mm), Tri-wing bits (No's 1, 2, 3, 4), security Hex bits (5/64, 3/32, 7/64, 1/8, 9/64, 5/32"), spanner pin drive bits (4, 6, 8, 10mm), and a magnetised bit holder, all in a soft plastic case.
Cat T 4506 **$\$24^{95}$**

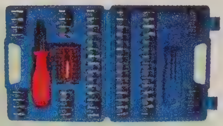


64 Piece Security Bit Set

This 64-piece bit set is packed in two soft plastic storage cases for ease of carrying. Includes a magnetic bit holder. Each set contains:

a) Security Torx bits - no. 8, 10, 15, 20, 25, 27, 30, 35, 40
b) Hex bits - 5/64, 3/32, 7/64, 1/8, 9/64, 5/32"
c) Tri-wing bits - numbers 1, 2, 3, 4.
d) Spanner bits - no.4, 6, 8, 10.
f) Hex bits - no.2, 2.5, 3, 4, 5, 6.
g) Slotted bits - 3, 4, 5, 6, 7mm.
h) Pozidrive bits - PZ0, PZ1, PZ2, PZ3.
i) Square bits - S1, S2, S3, S4.
j) Philips bits - no. 0, 1, 2, 2 drywall, 3, 4.
k) Clutch bits - 1/8, 5/32, 3/16, 7/32, 1/4
l) Torx bits - no. 6, 7, 8, 9, 10, 15, 20
m) Magnetised bit holder
n) Hex to Square adaptor.

Cat T 4501 **$\$34^{95}$**

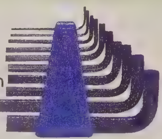


101-Piece Bit Set

Includes a hard plastic carry case, driver handle, and magnetised bit holder.

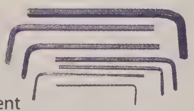
a) Flat blade - 3/32, 7/64, 1/8, 9/64, 5/32, 3/16, 7/32, 1/4, 9/32, 5/16"
b) Phillips - #0, 1, 2, 2 Drywall, 3, 4
c) Square - S0, S1, S2, S3 - Torx - 5, 5.5, 6, 7, 8, 9, 10, 15, 20, 25, 27, 30, 35, 40, 45, 50
d) Pozidrive - #0, 1, 2, 3, 4
e) Hex (SAE) - 1/16, 5/64, 3/32, 7/64, 1/8, 9/64, 5/32, 3/16, 7/32, 1/4, 9/32, 5/16"
f) Hex (mm) - 1.5, 2, 2.5, 3, 4, 5, 5.5, 6, 7, 8mm
g) Clutch - 1/8, 5/32, 3/16, 1/4, 7/32
h) Security Torx - 8, 10, 15, 20, 25, 27, 30, 35, 40
i) Security Hex (mm) - 2, 2.5, 3, 4, 5, 6mm
j) Tri-wing - 1, 2, 3, 4
k) Spanner - 4, 6, 8, 10mm
l) Torque - 6, 8, 10mm

Cat T 4513 **$\$49^{95}$**



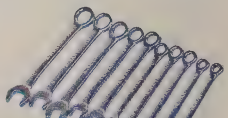
10-Piece Allen Key Set

A handy metric Allen key set that comes complete with a plastic clip to help keep them together and organised. Contains 1.5mm, 2mm, 2.5mm, 3mm, 4mm, 5mm, 5.5mm, 6mm, 8mm & 10mm Allen keys.
Cat T 3545 **$\$6^{95}$**



Allen Key Set

This set is a must if working on European and Japanese equipment that uses Allen screws. The seven gunmetal-finished Allen keys come in a plastic wallet in sizes 0.89mm, 1.27mm, 1.5mm, 2mm, 2.5mm, 3mm and 4mm.
Cat T 5080 **$\$7^{95}$**



10-Piece Mini Spanner Set

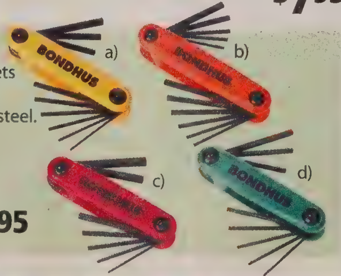
A handy set of quality metric spanners covering most sizes between 4mm and 11mm. Suitable for light/medium duty uses.
Cat T 4550 **$\$19^{95}$**

Folding Key Tool Sets

High quality industrial strength folding tool sets with individually rotatable blades. Fibre reinforced resin handles – 40% stronger than steel.

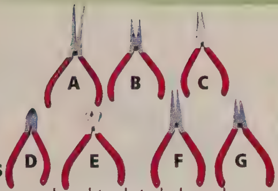
a) Imperial Allen Keys	Cat T 6147
b) Metric Allen Keys	Cat T 6148
c) Met/Imp Allen Keys	Cat T 6149
d) Torx Screwdrivers	Cat T 6146

$\$14^{95}$



5-piece Reversible Ratchet Set

A set of handy offset box-end wrenches that provide reversible end travel through a simple lever adjustment. Sizes covered are 5.5, 6, 7, 8, 10, 11, 12, 13, 14 and 17mm.
Cat T 4560 **$\$32^{50}$**

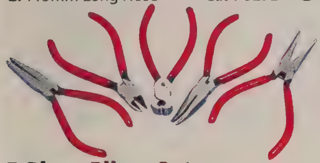


Spring Loaded Pliers/ Nippers

General purpose hand-tools to help make work easier! Specially selected for project work, are all high carbon steel, drop forged, hardened and tempered with insulated handles.

A. 153mm Needle Nose	Cat T 3293
B. 127mm Long Nose	Cat T 3290
C. 125mm Bent Nose	Cat T 3297
D. 115mm Diagonal Nipper	Cat T 3291
E. 115mm End Nipper	Cat T 3298
F. 125mm Flat Nose	Cat T 3296
G. 115mm Long Nose	Cat T 3292

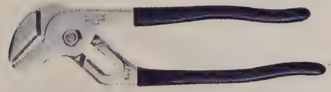
$9.50



5-Piece Pliers Set

All are drop forged, high carbon steel. With 127mm needle nose, 127mm bent nose, 127mm flat nose, 115mm diagonal cutting and 115mm end cut pliers in a handy plastic pouch.
Cat T 3295

$34.95



Groove Joint Pliers

Quality chrome-plated 190mm groove joint pliers, drop-forged from tool steel, plus hardened and tempered for long life. Adjustable into 5 positions, they use a tongue-groove joint to ensure the handle won't slip between settings when under load. Insulated handles. Made in Japan.
Cat T 3317

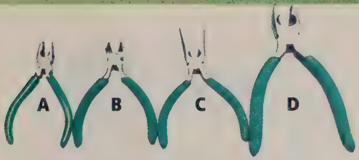
$19.95

8-Piece Hobby Tool Kit

HOBBYIST TOOL SET

Bargain priced, this kit comes with 6 jeweller's screwdrivers (0.9, 1.2, 1.8, 2.4, 3 & 3.2mm flat head), quality 120mm long-nose pliers and 110mm side-cutters. The pliers are hardened and tempered with insulated handles.
Cat T 3294

$22.50



Spring-Loaded Pliers/Nippers

High quality tools for the electronics enthusiast. These spring-loaded plier/nippers use a specially heat-treated steel for excellent cutting capacity and durability and have comfortable handle insulation for easy long-term operation.

A. 110mm Mini Combination Plier	Cat T 3302
B. 120mm Diagonal Nipper	Cat T 3300
C. 135mm Long-nose Plier	Cat T 3301
D. 165mm Lge. Combination Plier	Cat T 3303

$12.95 ea

Micro-Precision Plier Set

A superbly built set of spring-loaded micro pliers/nippers with fully insulated handles. Made from quality stainless steel and come with; 90mm cutting nippers, 100mm flat nose, 100mm round nose, 100mm bent nose and 100mm long nose pliers.
Cat T 3575

$34.95

Transistor Mini Nippers

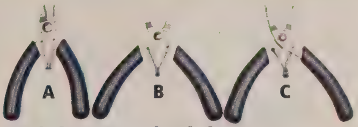
Ideal for PCB work! Japanese-made stainless steel construction with insulated easy-grip handles. Spring loaded, standard angle blades allow completely flush cutting edge. 5mm opening x 8mm super-sharp blade.
Cat T 3205

$32.50

9-Piece Hobby Tool Kit

A great way to start building your tool collection. Includes 3 flat-blade screwdrivers (1.4, 1.8, and 2.4mm tips), 3 Phillips head screwdrivers (00, 0 and 1), stainless-steel side cutters and medium-nose pliers, and a 38mm magnifying glass, all in a handy storage case.
Cat T 4605

$32.50



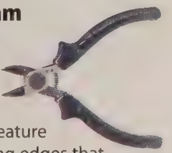
Stainless Steel Mini Pliers/Cutters

Precision stainless-steel pliers and nipper for working with small components and general printed circuit boards. Features quality stainless-steel construction, are spring loaded, and have well-insulated handles.

90mm Diagonal Nipper	Cat T 3310
100mm Round Nose Plier	Cat T 3312
105mm Flat Nose Plier	Cat T 3311

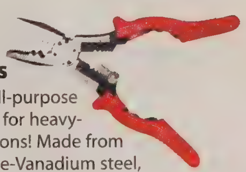
$14.95 ea

Heavy-Duty 125mm Diagonal Nippers



Our very best diagonal nippers! High quality Japanese SK-7 drop-forged tool steel, they feature precision finished cutting edges that have been high frequency treated for a high Rockwell hardness of HRC60 for very long life. A recessed coil spring and thick moulded handles provide comfortable operation, with a wire stripping hole in the cutting blades for convenience.
Cat T 3315

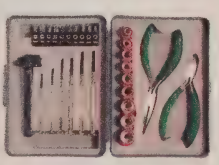
$34.95



Heavy-Duty Pliers

Solidly built all-purpose 200mm pliers for heavy-duty applications! Made from strong Chrome-Vanadium steel, these pliers have large semi-insulated handles for greater leverage, an in-built wire stripper covering 5 wire sizes, a wire cutter, small bolt cutter for soft steel bolts, as well as a lug crimper.
Cat T 3305

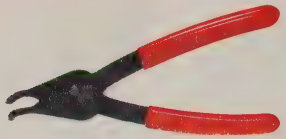
$22.50



28-Piece Compact Tool Kit

A convenient collection of tools complete with a foam-lined plastic storage case. Includes 9-piece Hex Nut drivers and quality reversible ratchet handle, 6-piece Jewellers screwdrivers, side-cutters, pliers, plus 10-piece assorted screwdrivers bits.
Cat T 4610

$39.95



Int/Ext Circlip Pliers

A simple tool for use with both internal and external retaining rings used around the home or car. Metal blades with PVC coated handles.
Cat T 3522

$9 95

Cable Tie Gun

The convenient way to tighten plastic cable ties. Has rigid plastic body, pistol grip action, and adjustable tension control for cutting off
Cat T 3720

$19 95

Copper Wire Cutters

Ideal for cutting multi-strand copper cables typically used in vehicles and solar powered installations. Suits our W-2302 through W-2308 OFC DC cables.

Medium	Cat T 3320	**$12 95**
Large	Cat T 3322	**$19 95**

Economy Wire Strippers

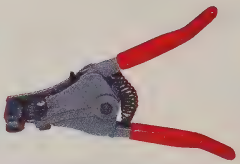
Large adjustable range. Has hardened jaws, is easy to use and bargain priced.
Cat T 3630

$6 95

3-in-1 Wire Stripper

Three handy tools in one - measured wire stripper, plier and wire cutter. With spring-loaded, insulated handles.
Cat T 3165

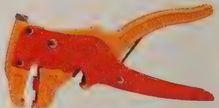
$12 95



Deluxe Wire Strippers

A completely automatic wire stripper - one action is all it takes. Allows you to strip wires from 1mm to 3.2mm.
Cat T 3620

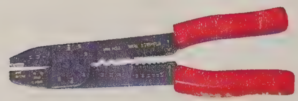
$22 50



Adjustable Wire Stripper

With self-adjusting mechanism that allows stripping of PVC insulation from 0.5mm2 to 6mm2 in size without damaging the conductor. The stripping length is adjustable from approx. 3mm to 25mm, and manual adjustment is available. With in-built cable cutter.
Cat T 3622

$24 95



Crimping Tool

This economical, lightweight crimper can strip various wire sizes from 0.75mm to 6mm, and crimp your cable quickly and reliably. Makes fitting lugs and connectors a breeze.
Cat T 3525

$14 95

Phone Line Crimping Tool

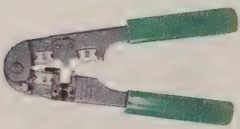
Cuts, strips and crimps modular style telephone line cords. Suits 4-pin and 6-pin modular plugs.
Cat T 2591

$16 95

Lug Crimping Tool

A handy tool when you're working with non-insulated terminals. Has strong metal jaws and cable cutter, plus handles 10-28AWG wire.
Cat T 3528

$19 95



6-Pin Phone Line Crimping Tool

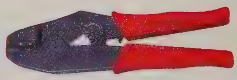
All metal construction for longer life. Cuts, strips and crimps modular style telephone line cords. Suits 6P6C, 6P4C and 6P2C connectors.
Cat T 2916

$39 95

6/8 Pin Modular Crimp Tool

Cuts and strips cables, and crimps various 6pin and 8pin modular connectors including 6P4C (RJ-11), 6P6C (RJ-12), and 8P (RJ-45) varieties. Rugged metal construction for accurate crimps.
Cat T 2920

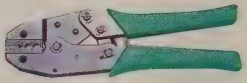
$49 95



Professional Lug Crimping Tool

This robust lug crimper has a ratchet drive for accurate control, variable pressure adjustment and double jaws for single action crimping. Suits a wide variety of common lugs.
Cat T 3535

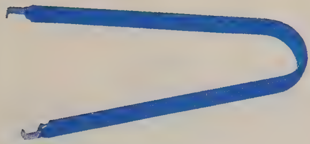
$59 95



Ratchet Coaxial Crimping Tool

Perfect for F, BNC, TNC, N, Teflon, Thinnet PVC and Fibre-Optic Connectors. Has an accurate ratchet drive and double jaws for single-action crimping.
Cat T 3537

$59 95



IC Extraction Tool

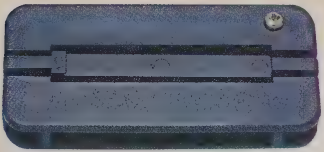
Works with all DIL ICs and ensures no bent pins and no static damaging. Operates like a pair of hooked tweezers.
Cat T 4650

$4.95

8-Piece IC Insertion & Extraction Kit

You'll never damage ICs when removing or installing them! contains 6 IC inserters for all the common DIL packages, plus DIL and square IC extractors.
Cat T 4848

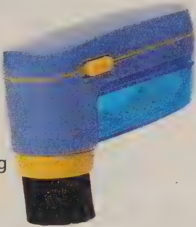
$49.95



IC Pin Straightener

Slip the IC into the slot and squeeze. Accepts 8 to 20-pin narrow and 24 to 48-pin wide ICs. Has a ground connection point to prevent static build-up during use.
Cat T 4535

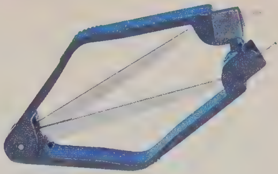
$11.50



Handheld Mini Vacuum Cleaner

Great for cleaning keyboards, Hi-Fi equipment & monitors. This Japanese unit's brush/tube head gently sweeps dust from the surface being cleaned before vacuuming it away. Requires 2 x "AA" batteries.
Cat T 1705

$34.95

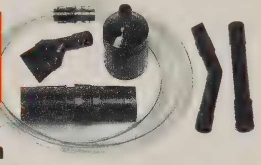


PLCC Extractor

Every computer tech needs one! The extractor makes the job of removing plastic-leaded chips and upgrading computer processors a breeze.
Cat T 4655

$13.95

NEW FOR '99



Vacuum Cleaner Accessories Kit

Converts almost any domestic vacuum cleaner into a powerful micro VAC to clean the smallest area. Ideal for use with computers and peripherals, HI-FI and video equipment, typewriters, office equipment and much more.
Cat T 1710

$17.50

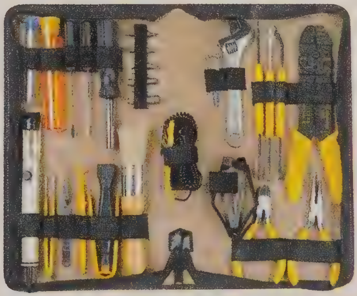
16-Piece Computer Servicing Kit

No computer enthusiast should be without one. It contains:

- PLCC Extractor
- Wire Cutters
- Long-Nose Pliers
- Component Tube
- 1/4" Hex Driver
- 3/16" Hex Driver
- Driver Handle
- Double-ended Torx bit (T-10/T-15)
- IC Inserter (14 & 16 pin)
- Large Flat-Head Screwdriver - 75 x 5mm
- Small Flat-Head Screwdriver - 75 x 3mm
- Large Phillips-Head Screwdriver - No. 1
- Small Phillips-Head Screwdriver - No. 0
- Insulated Tweezers
- Pearl Catch
- IC Extractor

All in a zippered case
Cat T 4843

$59.95



27-Piece Computer Servicing Kit

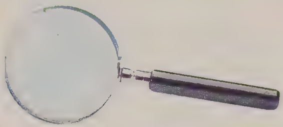
Everything a computer serviceman needs. Includes:

- PLCC Extractor
- Wire Cutters
- Long-Nose Pliers
- Component Tube
- Desoldering Pump
- Solder in Dispenser Tube
- IC Inserter (14 & 16 Pin)
- 1/4" Flat/No. 2 Phillips Screwdriver Bit
- 3/16" Flat/No. 1 Phillip Screwdriver Bit
- Small Flat-Head Screwdriver
- Small Phillips-Head Screwdriver
- Double-Ended Torx Bit (T-10/T-15)
- 1/4" Hex Driver Bit
- 3/16" Hex Driver Bit
- Driver Handle
- Small Insulated Tweezers
- Needle-nose Tweezers
- Pearl Catch
- IC Extractor
- Cleaning Brush
- Anti-static Wrist Strap
- 150mm Shifting Spanner
- Crimping Tool
- Soldering Aid Set
- Heat-Sink Clip

All in a zippered case
Cat T 4852

$129.95

Magnifiers



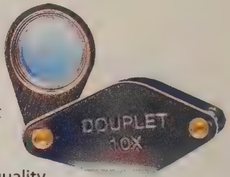
Round Magnifying Glass

A handy 63mm diameter magnifying glass with 2.5x magnification and a quality glass lens. Great for checking values on small components such as resistors.
Cat T 4590 **$9.95**

Mirror & Pick-Up Tool

Great when you're working in tight places. The inspection mirror with telescopic arm and swivel head allows you to get in there and see what's happening. The other end of the telescopic arm doubles as a magnetic pick-up tool.
Cat T 4525 **$9.95**

Pocket Magnifier



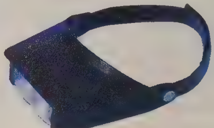
Ideal for checking surface mount components, cracks in PCB tracks, or the quality of solder joints. This well-made pocket magnifier with 15mm diameter glass lens provides 10x magnification, and slides back into its plated brass case for protection after use.
Cat T 4595 **$19.95**

Illuminated Pocket Magnifier

Great for checking components, PCBs, and other items where a magnified view is required. Features a large 26mm glass lens, 10 x magnification, carry pouch, and a pre-focussed globe to provide lighting of the viewed item. Requires 2 x "AA" batteries.
Cat T 4597 **$27.50**

Adjustable Magnifier & Stand

The perfect way to magnify items when you need both hands free. Consists of a large 87mm magnifying glass attached to a flexible gooseneck. Includes heavy die-cast metal base.
Cat T 4592 **$29.95**



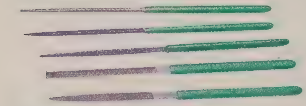
Visor Magnifier

This lightweight visor simply slips onto your head and you flip it down when a magnified view is required. Has selectable 2.2x and 3.3x magnification.
Cat T 4593 **$34.95**

Needle Files

Needle File Set

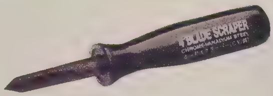
A 5-piece set of short blade needle files for use in restricted spaces. Comes with flat, square, round, domed, and triangular files.
Cat T 3225 **$19.95**



Needle File Set

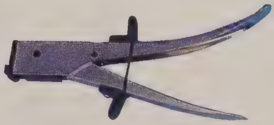
A set of five needle files with a great selection of shapes for just about any job. The 90mm insulated handles allow you to get a good grip, while the 75mm blades give you plenty of length. Comes in a handy plastic storage pouch.
Cat T 3230 **$24.95**

Reamers



Handy 4-Blade Scraper

Features a chrome vanadium blade with four surfaces on it for deburring and countersinking holes as well as general finishing work. It'll help you give your project's front panel or chassis a professional finish.
Cat T 3625 **$6.95**



Nibbling Tool

Allows you to cut almost any shape or size of hole in sheet steel to 0.6mm thick or light alloy to 1.5mm thick. It follows curved or straight lines with ease and is also great for many plastics.
Cat T 4945 **$22.50**

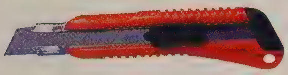
Countersink Tool

Makes countersinking screws easy! Simply drill the hole, insert the countersink tool and turn it. It's got a hardened blade for a long, trouble-free life.
Cat T 4925 **$7.50**

Tapered Reamer

The perfect tool for shaping and enlarging holes in thin metals, plastics and wood. Great for chassis bashers – gives you exact-sized holes. Tapers from 4mm to 20mm and is made from high-quality treated steel.
Cat T 4920 **$24.95**

Knives



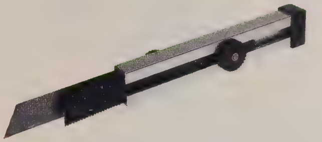
Utility Knife

You'll never have to put up with blunt blades again. This handy knife contains a snap-off replaceable blade and comes with a safety blade lock plus a comfortably-sized grip for accurate work.

Cat T 3615 $\$6^{95}$

Replacement Blades Pack of 10

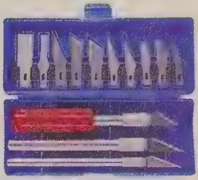
Cat T 3616 $3.95



Aluminium Frame Utility Knife

This solidly built aluminium frame utility knife is great for hobby work as it contains a retractable knife blade as well as a hacksaw blade.

Cat T 3605 $\$12^{50}$



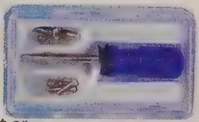
Precision Knife Set

This 13-piece Precision Knife Set comes with three quality (varying size) knife handles and 10 spare blades in a variety of shapes and sizes. Comes in a handy plastic storage case.

Cat T 3618 $\$19^{95}$

Replacement Blade Set

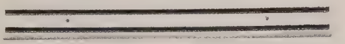
Cat T 3619 $6.95



Eye Glass Repair Kit

Helps with the repair, adjustment or tightening of many spectacle frames. Includes hinge screws (2 sizes), mini screwdriver, nosepads, head-hugger hinge rings all in a pocket size carry case.

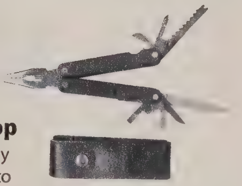
Cat T 4596 $\$4^{95}$



Magnetic Tool Holder

Never lose your tools again. This Magnetic Tool Storage Bar is ideal for the workshop, garage or even for the kitchen knives. It holds metal tools against the wall for easy storage. The 50cm strip simply screws to the wall.

Cat T 5505 $\$12^{50}$



Pocket Workshop

An incredibly handy tool to have clipped to your belt. It unfolds into strong pliers, plus has a range of fold-out attachments such as a knife, screwdrivers, bottle opener and file. Supplied with a leather storage case.

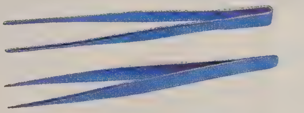
Cat T 3308 $\$24^{95}$

Tweezers

Spring Hook Tool

A handy tool for working with springs or devices with small openings that require movement within a tight space.

Cat T 4532 $\$6^{50}$ea



Tweezers

Fine-point tweezers for holding small nuts, components, delicate instruments, wires or whatever small task you have.

Pointed	Cat T 4620
Serrated Jaw	Cat T 4630

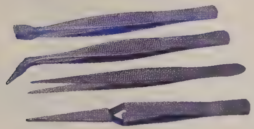
$\$4^{95}$ea

Stainless Steel Tweezers

These high-grade stainless steel tweezers are ideal for use in the electronics and precision engineering industries as they are non-magnetic, acid-resistant and have finely polished surfaces.

Fine Point	Cat T 4632
Long Nose	Cat T 4634
Curved Nose	Cat T- 4636

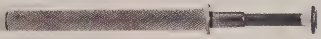
$\$5^{50}$ea



Universal Tweezer Set

Great value! Four different 110mm tweezers in one pack. With fine-point blades, flat blades, curved blades and even reverse action (Squeeze to release).

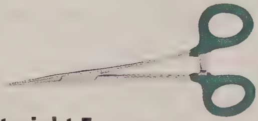
Cat T 4625 $\$12^{95}$



Pearl Catch

A handy tool for picking up small components or hardware items from hard to reach areas (e.g. the bottom of a completed project). Uses 4 springy splines to hold an item. All metal construction.

Cat T 5117 $\$6^{95}$



6″ Straight Forceps

Quality stainless steel locking forceps to hold leads or components in place while you work. Forceps have three locking teeth providing variable pressure and coated handles for comfort.

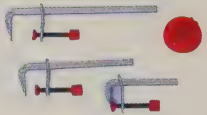
Cat T 4639 $\$17^{50}$

Clamps & Vices

Hobby 'G' Clamp Set

Three handy 'G' clamps that are perfect for most hobby work and model-making. All fit the 30mm (diam.) magnetic base supplied. Sizes include 40mm x 35mm, 30mm x 30mm and 20mm x 25mm.

Cat T 4755 **$7.95**



Hobby 'F' Clamp Set

Just like a spare set of hands for the workbench or toolbox! Includes three sizes: 20 x 120mm, 20 x 80mm and 20 x 40mm and all fit to the 38mm magnetic base included in the pack.

Cat T 4750 **$9.95**

Hobby Mini Vice

Sturdy, light-weight and portable, it fits easily to workbench or table (anything up to about 25mm thick). Made from die-cast aluminium alloy for strength and durability, with jaws that are 60mm wide and open to 50mm.

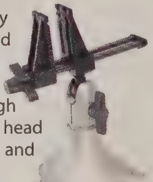
Cat T 4747 **$19.95**

Multi-Angle Metal Vice

Beautifully crafted metal vice suitable for a variety of hobby uses. It mounts to a bench up to 50mm thick, has jaws with rubber covers 75mm wide that open apart up to 55mm. Made from diecast aluminium alloy.

Cat T 4742 **$44.95**

Pana Vise Jr PCB Vice



You'll find this vice handy when both hands are tied up working with PCBs. It holds the board firmly between adjustable tough plastic clamps, while the head assembly can be rotated and tilted. Features a strong diecast base, which can be screwed to a work-bench. Made in USA.

Cat T 4740 **$54.95**

High Quality 3" Swivel Vice

A very high-quality mini vice that can be bolted or suction-fixed to the benchtop. It's made from high-quality cast alloy and has steel jaws with removable rubber pads. The ingenious swivel action allows you to mount it in almost any position.

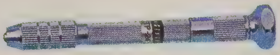
Cat T 4745 **$59.95**

Drills

Keyless Chuck

This snap-out keyless chuck can be used with various cordless screwdrivers that normally take a Hex screwdriver bit. Can also be used for PCB drills (down to 0.5mm) that are normally too small for a standard drill chuck.

Cat T 4743 **$9.95**

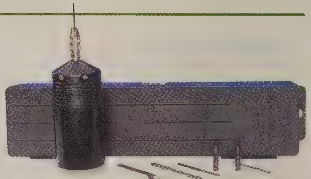


Pin Vice

A quality pin vice complete with 2 internal collars covering the 0 to 3.2mm diameter range. Ideal for where hand drilling of delicate PCBs or cases is required. Drill bits not supplied.

Cat T 5115 **$19.95**

High-Speed Mini Drill

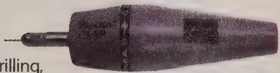


Allows speeds up to 30,000RPM depending on supply voltage. Comes with 3 high-speed drill bits, 3 collets, grinding bit, spanner, tommy bar and DC adaptor cable all in a sturdy plastic case. Requires 12-35V DC (1.5-2A) adaptor.

Cat T 4751 **$29.95**

PCB drill press to suit T 4751	Cat T 4700	**$29.95**

Hobby Super Drill Set



A lightweight tool package for drilling, engraving, routing, shaping, sanding or milling. The main body features a strong 12V DC motor plus quick change chuck for easy attachment of various size bits. Standard accessories supplied include 5 high speed drill bits, 5 brass collets (for 0.5, 1.0, 1.5, 2.4 and 3.0mm bits), 4 grindstones with arbour, 1 thin grinding wheel and a 240V mains plugpack.

Cat T 4761 **$69.95**

Accessories Kit (5pc drills, 4pc collets, 4pc grindstones, 1pc grinding wheel)	Cat T 4774	**$29.95**
12pc High Speed Drill Bits (0.5, 0.8, 1.0, 1.2, 1.5mm)	Cat T 4775	**$14.95**

ARLEC Super Tool

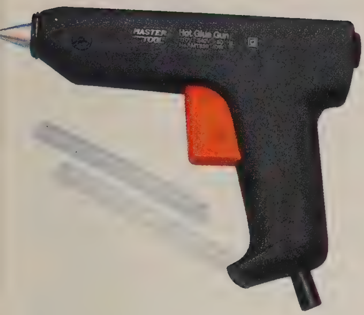
ARLEC
SUPER TOOL

Great for sanding, polishing, drilling, engraving, milling etc! Includes wire brush, milling cutters, grinding wheel, high speed drills, chuck collets, eraser sticks and mains plug pack adaptor. Complete with carry case.

Cat T 4754 **$99**

Super Tool Accessories

4 pc Drill Bit Kit	Cat T 4756	**$19.95**
3pc Engrave/Mill Kit	Cat T 4764	**$24.95**
3pc Grindstone Kit	Cat T 4758	**$29.95**
6pc Slitting Saw Kit	Cat T 4766	**$29.95**
1pc Diamond Bit Engraving Kit	Cat T 4769	**$34.95**



Hot-Melt Glue Gun

A mains powered 40W glue gun with convenient trigger controlled glue feed. Takes 11mm diameter glue sticks.
Cat T 1410

$29.95

Pk of 6 100mm x 11mm Glue Sticks
Cat T 1421 **$3.95**

ARLEC

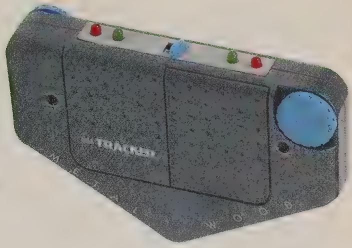
Easy Etch Engraver

Protect and identify your property. Quickly and easily mark tools, stereo equipment and household valuables with a permanent identification or serial number. Complete with AC plug pack and long cord.
Cat T 4753

$49.95

Diamond Bit Engraving Kit
Cat T 4769 **$34.95**

Engrave/mill kit
Cat T 4764 **$24.95**

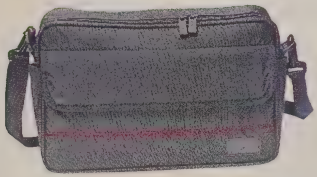


Track Stud Finder

Two tools in one! This versatile tool is just the thing for locating joists, battens and rafters through walls. It can also be used for detecting live/dead cables, pipes and mains when installing pictures, shelves or ceiling fans. Whether you're a professional or DIY renovator, you'll appreciate the quality of the Tracker Stud Finder.
Cat T 1990

$49.95

Tool Cases



Versatile Travel/Tool Bag

Your tools will remain in top shape when you carry them around in this versatile bag. Made of quality nylon with padding for extra protection, it comes complete with strap for easy carrying.
Cat T 4854

$44.95

Contractor's Briefcase Two Sided Bag - Tool and Briefcase

The Tool Side: Holds the tools you most frequently use and a cellular phone. With pockets and elastic keepers of various sizes. The Business Side: A mobile office for pads, job forms, calculator, pens, business cards, lunch and a key keeper.
Cat T 4859

Tools not included

$69.95

Aluminium Frame Tool Case

Keep your precious equipment safe with this sturdy tool case. Ideal for safely carrying sensitive test equipment, cameras, notebook computers etc as well as standard electronic tools. Padded interior dividers and removable tool holder are provided for easy partitioning of the storage space.
Size: 320mm (L) x 230mm(W) x 150mm(H).
Cat T 4858
Accessories not included

$69.95

Aluminium Frame Tool Case

A rugged lockable serviceman's case with aluminium frame that's suitable for carrying sensitive test equipment, cameras, notebook computers etc as well as standard electronics tools. It's supplied with an internal removable tool holder, 5 adjustable padded dividers and a shoulder carry strap.
Size: 480mm(L) x 326mm(W) x 150mm(H).
Cat T 4856

$79.95

Selectable Pattern Laser Pointer

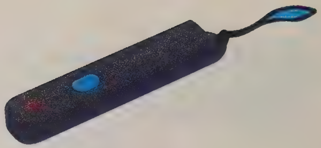
A novel 1mW laser pointer for use where various symbols might brighten up a meeting or reinforce a sales presentation. Patterns are Dot, Star, I Luv U, Circle and S symbol. Up to 50m range indoors, with adjustable focus control. Powered by 3 watch style batteries included.
Cat T 2901

$44.95

Keychain Miniature Laser Pointer

Amazing low price! Now you can keep a laser pointer in your pocket or clipped to your belt for those unexpected times when you have to point out something that's not within reach. Incredibly small, this 1mW laser pointer is contained in a tough metal housing just 9mm in diameter and less than 60mm long. Includes keychain with springclip for convenience storage. Powered by 3 watch style batteries (included).
Cat T 2903

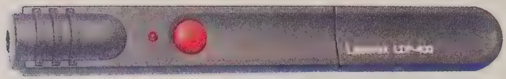
$49.95



Compact Laser Pointer

Simple to use and highly affordable, this compact laser pointer features a bright 1mW laser diode to indicate objects of interest to 50m away (indoors). Great for use at meetings, product presentations, seminars and lectures as well as in retail and industrial display areas. Measures 125mm(L) x 5mm(W) x 15mm(H). Supplied with a handy carry strap and 2 AAA batteries.
Cat T 2902

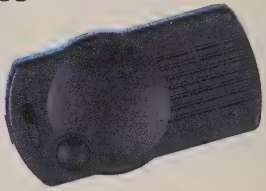
$69.95



Ergonomic Laser Pointer

Need to point out detail on an out-of-reach object? At the push of a button the Laserex LPD 400 will shine a small red dot on objects up to 50m away through the use of a thin, low power laser beam. It comes in a stylish sculptured case that's easy to hold for long periods. Fits the hand snugly. Requires 3 x N size or 2 x AAA size batteries. Specifications: Laser diode < 1mW max at 670nm+/-10nm. Complies with AS 2211-1997 (Class 2 laser product). Caution: Do not stare into beam.
Cat T 2912

$79



Twins Lens Laser Pointer

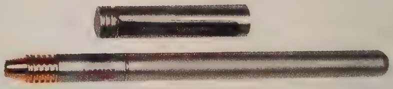
A novel laser pointer for situations where a choice of light patterns is required during meetings or presentations. This 1mW model uses a switchable dual-lens system to either project a small red dot onto objects up to 50m away (indoors), or to project a straight line that can be used to visually underline text or images that are out of reach. Operates on 2 x AAA batteries (S 7226).
Cat T 2904

$89

Ultra-Bright Laser Pointer

The Laserex LDP-300UB is a handheld laser pointer that features an "ultra-bright" 1mW laser module with 635nm frequency providing up to 250 metres visible range indoors. Built for heavy-duty uses with a diecast internal frame covered by a polycarbonate shell. Uses either 2 x AAA (S 7226) or 3 x N size batteries (S 7241).
Cat T 2909

$129



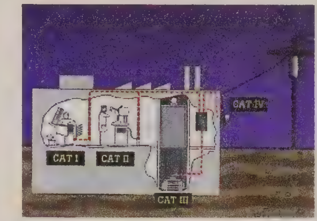
Executive Laser Pointer

An elegant new pen style laser pointer for the executive who requires a more compact unit. The Laserex LP-2000 uses a streamlined design and attractive brushed metal body with gold finish. It's bright 1mW maximum beam provides easier viewing during presentations and meetings. Also features a built-in pocket clip making it both easy to secure and instantly accessible. Requires 2 x AAAA size batteries (S 3275). Specifications: Laser diode < 1mW max at 670nm+/-10nm. Complies with AS 2211-1997 (Class 2 laser product). Caution: Do not stare into beam.
Cat T 2913

$129

FLUKE – The tough just got tougher

What the IEC 1010-1 safety rating means to you. As electrical systems grow more and more complex, spikes, transients, surges and sudden overvoltage events become more common. These can trigger a sequence of events that may lead to serious injury. Which is why test equipment must be designed to protect people who work in this high-voltage high-current environment. The IEC 1010 safety standard was established to define four overvoltage categories (CATI, CAT II, CATIII and CAT IV) based on the magnitude of danger from transient impulses. The new Fluke 70 Series III DMMs have been designed to meet the new IEC-1010 standards. More importantly, they have been approved by CSA as actually making these standards. Which means they are designed to protect you against transients in three-phase distribution systems, including • Single-phase commercial lighting • Equipment in fixed installations, such as switch gear and polyphase motors • Bus and feeder in industrial plants • Lighting systems in larger buildings • Appliance outlets with short connections to the service entrance.



Fluke 73 Series III Multimeter

Default auto-ranging mode, AC/DC ranges to 600V and 10A, continuity beeper, diode test and analogue bargraph, rugged removable holster, rated to 600V Cat II.
Cat Q 1703

$359

Fluke 75 Series III Multimeter

New ergonomic styling and large easy to read display, automatic Touch Hold, AC/DC ranges to 600V and 10A, diode test, continuity beeper and analogue bargraph, rated at 600V Cat III.
Cat Q 1705

$439

Fluke 77 Series III Multimeter

New styling, 3200 count display with analogue bargraph, 1000V and 10A ranges for both AC and DC, auto-ranging plus all the other features of the Fluke 75, rated at 600V Cat III and 1000V Cat II.
Cat Q 1707

$519

Fluke 87 Series III Multimeter

Easy to read backlit display, Min/Max Average recording mode, capacitance, frequency and conductance ranges, relative mode, 1000V and 10A ranges in AC and DC, true RMS AC voltage and current, rated at 1000V Cat III.
Cat Q 1710

$929

We stock an extensive range of FLUKE products and accessories.

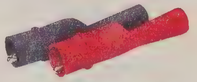
Lifetime Warranty!
Keep your Fluke meter up and running
For 20, 70 & 80 Series DMMs
Series III meters only

Please ask instore for details.

Alligator Clips

Set of one black and one red slip-on clips for right-angle test leads.
Cat Q 1660

$22.95



Right-Angle Test Leads

Shrouded input plugs which will not pull out of your meter during use.
Cat Q 1650

$29.95

Fluke Test Clips AC80 Hook

Cat Q 1661

$49.95

Fluke Alligator Clips AC85 Large

Cat Q 1662

$29.95

FLUKE Fuses

Replacement fuses for your quality FLUKE meters.

Suits	Description	Cat No	Price
Fluke 73, 75, 77 & 87	(KTK 15) 15A/600V	P-7884	**$24.95**
Fluke 87	(BBS-1) 1A/600V	P-7882	**$9.95**
Fluke	(FSF3) 3A/600V	P-7883	**$7.00**
Fluke 75 & 77	(GDA-630) 630mA/250V	P-7880	**$4.95**

Also Available:

Fluke 7-600 Electrical Tester	Q 1633	**$199**
Fluke 19 Digital Multimeter	Q 1719	**$229**
Fluke 12B Multimeter	Q 1634	**$269**
Fluke 51 Digital Thermometer	Q 1622	**$349**
Fluke 30 Clamp Meter	Q 1675	**$325**
Fluke 16 DMM with Temperature	Q 1613	**$329**
Fluke T5-600 Electrical Tester	Q 1628	**$229**
Fluke 18 Automotive Multimeter	Q 1636	**$299**

Fluke Holster C10 Yellow	Q 1614	**$33.95**
Fluke Carry Case C12A Soft	Q 1616	**$32.95**
Fluke Holster C70Y Yellow	Q 1663	**$54.95**
Fluke Case C25 Ruggedised Soft	Q 1664	**$59.95**
Fluke Test Leads TL20 Industrial	Q 1652	**$115**
Fluke Test Leads TL22 R/A	Q 1653	**$49.95**
Fluke Probes TP80 Electronic	Q 1655	**$59.95**
Fluke Test Lead Set Y8134	Q 1658	**$85**
Fluke Test Clips AC20	Q 1659	**$44.95**

Analogue Multimeters

Battery Tester

Tests most sizes. Save money and batteries with this compact and easy-to-use 15-range battery tester. In an instant you'll know whether a battery is fresh or flat. With an impact-resistant case, it can take the rough and tumble of just about any tool box! It's self-powered so it never needs batteries.

Cat Q 1001

$\$22^{50}$

9-Range Multimeter

- Small & Lightweight
- Inbuilt Diode & Fuse Protected
- Mirrored Scale

Ranges
DC V: 15, 150, 500V
AC V: 15, 150, 500V
DC Current: 150mA
Resistance: x 1K
Battery Check: 1.5V
Cat Q 1005

$\$24^{95}$

12-Range Multimeter

- Safety recessed test lead connections
- Inbuilt diode & fuse protected
- Mirrored scale
- Off position for meter protection

Ranges
DC V: 15, 150, 500V
AC V: 15, 150, 500V
DC Current: 50mA, 250mA
Resistance: x 10, x 1K
Battery Check: 1.5V, 9V
Cat Q 1006

$\$29^{95}$

19 Range Plus dB Multimeter

- Diode and fuse protection
- 19 ranges plus dB
- Continuity checker
- 20K/Volt sensitivity
- Mirrored scale
- Adjustable carry handle/stand
- Recessed terminals for added safety

Ranges
DC V: 2.5, 10, 50, 250, 1000V
AC V: 10, 50, 250, 1000V
DC (Current): 5mA, 50mA, 500mA & 10A
Resistance: 10K, 100K, 10Mohms
Battery test: 1.5V & 9V
dB: -8dB to +62dB
Cat Q 1025

$\$49^{95}$

21 Range Plus dB Multimeter

- Measures resistance up to 20Mohms
- Sensitivity 20,000 Ohm/V
- Overload protection
- Diode & fuse protection
- 3.5" meter
- Mirrored scale
- Tilt stand
- With carry case

Ranges
DC Volts: 0.1, 2.5, 10, 50, 1000V
AC Volts: 10, 50, 250, 1000V
DC Current: 50µA, 2.5mA, 25mA, 250mA, 10A
AC Current: 10A
Resistance: x1, x10, x1K, x10K
Cat Q 1024

$\$69^{95}$

NEW FOR '99

26 Range Analogue Multimeter

- Temperature range
- DC current range
- Transistor type or quality check indicator
- Continuity buzzer
- Built-in tilt stand
- Mirrored scale
- Temperature probe included

Ranges
DC Volts: 0.6, 3, 12, 60, 300, 1000V
AC Volts: 12, 30, 120, 200, 1000V
DC Current: 120µA, 3mA, 300mA, 10A
Resistance: 5K, 500K, 5M, 50MΩ
Cat Q 1007

$99

19-Range Multimeter

- 3.5 Digit (2000 Count) LCD
- Diode Test
- Transistor Test
- Low Battery Warning

Ranges:

DC V:	0.2, 2, 20, 200, 1000V
AC V:	200, 750V
DC A:	200µA, 2mA, 20mA, 200mA, 10A
Resistance:	200, 2K, 20K, 200K, 2M ohms

Cat Q 1419

$29.95

19-Range with continuity

- 3.5 Digit (2000 Count) LCD
- Diode and audible continuity test
- Transistor test
- 50Hz square wave output
- Low battery warning

Ranges:

DCV:	0.2, 2, 20, 200, 1000V
ACV:	200, 750V
DCA:	2mA, 20mA, 200mA, 10A
Resistance:	200, 2K, 20K, 200K, 2M ohms

Cat Q-1421

$34.95

NEW FOR '99

19 Range Digital Multimeter with Data Hold

- 3.5 Digit LCD
- Continuity Buzzer
- Transistor and diode test
- Data hold button
- Low battery warning

Ranges

DC volts:	200mV, 2000mV, 20V, 200V, 500V
AC volts:	200V, 500V
DC current:	200µA, 2000µA, 20mA
Resistance:	200Ω, 2000Ω, 20kΩ, 200kΩ 20MΩ

Cat Q 1418

$34.95

NEW FOR '99

19 Range Digital Multimeter with 50Hz Square Wave Output

- 3.5 Digit LCD
- DC Current range
- 50Hz Square Wave output
- Continuity Buzzer
- Transistor and diode test
- Data hold button
- Low battery warning

Ranges

DC volts:	200mV, 2000mV, 20V, 200V, 500V
AC volts:	200V, 500V
DC current:	2000µA, 20mA, 200mA, 10A
Resistance:	200Ω, 2000Ω, 20kΩ, 200kΩ 20MΩ

Cat Q 1417

$39.95

"Pocket-Sized" Multimeter

- 3.75 Digit (3200 count) LCD
- Auto ranging
- Data hold
- Diode test
- Continuity test
- Analogue bar graph
- Auto power off
- Compact size - ideal for field work

Ranges

DCV:	320mV, 3.2, 32, 320, 450V
ACV:	3.2, 32, 320, 450V
Resistance:	320, 3.2K, 32K ,320K, 3.2M, 32M ohm

Cat Q 1577

$54.95

32-Range Multimeter

- 3.5 Digit (2000 count) LCD
- Diode and audible continuity test
- Transistor test
- 20A Current range
- Low battery warning

Ranges:

DCV:	0.2, 2, 20, 200, 1000V
ACV:	0.2, 2, 20, 200, 750V
DCA:	20uA, 200µA, 2mA, 20mA,
ACA:	20µA, 200µA, 2mA, 20mA, 200mA, 2A, 20A
Resistance:	200, 2K, 20K, 200K, 2M, 20M ohms

Cat Q 1427

$54.95

12 MONTH WARRANTY ON ALL DICK SMITH ELECTRONICS MULTIMETERS

Digital Multimeters

Multimeter 3.5 Digit 34 Range

- 3.5 digit (2000 count) LCD
- Pop up LCD display for adjustable viewing angle.
- Diode test
- Audible continuity test
- Transistor test
- Low battery warning

Ranges:

DC V: 200mV, 2, 20, 200, 1000V
AC V: 200mV, 2, 20, 200, 750V
DC A: 200uA, 2mA, 20mA, 200mA, 10A
AC A: 200uA, 2mA, 20mA, 200mA, 10A
Resistance: 200, 2K, 20K, 200K, 2M, 20M, 200M ohms
Capacitance: 2nF, 20nF, 200nF, 2uF, 20uF

Cat Q 1429

$\$74^{95}$

Multimeter 3.5 Digit 30 Range

- 3.5 digit (2000 count) LCD
- Transitor Test
- Diode Test
- Audible continuity buzzer
- Temperature

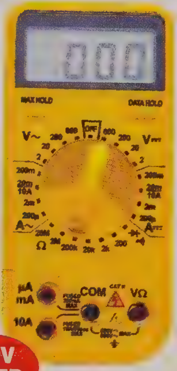
Ranges:

DC V: 200mV, 2, 20, 200, 1000V
AC V: 2, 20, 200, 700V
DC A: 2mA, 20mA, 200mA, 20A
AC A: 200mA, 20A
Resistance: 200, 2K, 20K, 200K, 2M, 20M, 200M ohms
Capacitance: 2000pF, 20nF, 200nF, 2uF, 20uF
Temperature: -40 to 1000˚C (unit) -40 to 260˚C (supplied probe)

Cat Q 1447

$\$89^{95}$

Multimeter 3.5 Digit 24 Range



- 3.5 digit (2000 count)
- Max hold + data hold
- Diode & continuity test
- Mains rated – suitable for 240V domestic mains measurements.
- Protective rubber holster

Ranges

DC V: 2, 20, 200, 600V
AC V: 2, 20, 200, 600V
DC A: 200uA, 2mA, 20mA 200mA, 10A
AC A: 200uA, 2mA, 20mA, 200mA, 10A
Resistance: 200, 2K, 20K, 200K, 2M, 20M ohm

Cat Q 1563

240V RATED

$129

23-Range Multimeter

- 3.75 Digit (3200 Count) LCD
- Diode test
- Audible continuity test
- Resistance

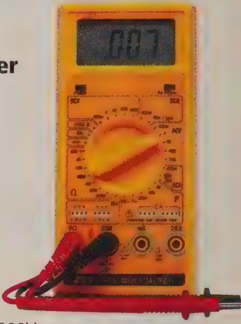
Ranges

DCV: 320mV, 3.2, 32, 320, 600V
ACV: 03.2, 32, 320, 600V
DCA: 32mA, 320mA, 10A
ACA: 32mA, 320mA, 10A
Resistance: 320, 3.2K, 32K, 320K, 3.2M, 32M ohms

Cat Q 1428

$\$89^{95}$

3999 Count Digital Multimeter



- Large 3.75 digit (3999 count) LCD
- Pop-out stand
- Auto-polarity
- Capacitor/diode/ transistor test
- Logic circuit test
- Frequency measurement (up to 4MHz)
- Peak reading hold
- Continuity test
- Soft carry case and test leads

Ranges

DCV: 400mV, 4V, 40V, 400V, 1000V
ACV: 400mV, 4V, 40V, 400V, 750V
DC Current: 40mA, 400mA, 10A
AC Current: 40mA, 400mA, 10A
Resistance: 400, 4K, 40K, 400K, 4M, 40M, 400M ohms
Trans. Check: hFE(NPN/PNP)
Capacitance: 4nF, 40nF, 400nF, 4uF, 40uF
Freq. Measure: Auto-ranging 4K-4MHz (4 scales)
Logic Measure: TTL type

Cat Q 1451

$139

Brymen Digital Multimeter BM602

Designed especially for Industrial and HVAC applications with enhanced safety in accordance with IEC1010-1 installation category III for 600V.

- 4 Digits 9999 Counts Resolution
- Data Updates 4 times/second
- Bargraph Updates 20 times/second
- 4 Selectable Sensitivities on Frequency
- Record Max, Min, Max-Min, Avg
- Relative Zero, Data Hold
- Auto Power Off
- Fast Audible Continuity
- Diode Test, Splash ProofRanges

DCV: 999.9mV to 600.0V
ACV: 999.9mV to 600.0V
Resistance: 999.9 Ohms to 40.00MOhms
Temperature: -20°C to 500°C
Capacitance: 1.000uF to 10.00mF
Frequency: 9.999Hz to 50.00kHz

Cat Q 1566

$199

Professional Clamp Meter

- 3 1/2 digital 1999 counts with high resolution
- ACA Current measurement up to 700 Amps
- Reading of PEAK, DATA HOLD function
- DC Volt: 600V ±0.5%
- AC Volt: 200/600V ±1.2%
- AC current: 20A range ±1.5% 50/60Hz, ±3.5% 40/500Hz, 200/700A ranges ±1.5% 50/60Hz ±3.5% 40/500Hz.
- Resistance: 2/200kΩ ±1%
- Frequency: Auto-Ranging up to 20KHz ±0.1%
- Diode test function
- Continuity: < 100Ω
- 600VDC/600VAC overload protection in DCV and ACV
- 600V overload protection in Diode, Ohm, Hz and Continuity

Cat Q 1475

$169

3.5 Digit LCR Multimeter

A highly reliable multimeter that accurately measures inductance, capacitance, resistance, voltage, logic and frequency. It features continuity, transistor and diode tests plus frequency and duty cycle. Additionally, it lets you know when your battery is running low as well as providing over-range indication, sounds an input warning beeper and provides auto power-off for longer battery life. Comes complete with test leads and holster.

Ranges

DCV:	200mV, 2V, 20V, 200V, 1000V
ACV:	200mV, 2V, 20V, 200V, 750V
AC/DC Current:	20mA, 200mA, 20A
Resistance (ohms):	200, 2K, 20K, 200K, 2M, 20M, 2000M
Capacitance:	2nF, 20nF, 200nF, 2uF, 200uF
Frequency (auto-ranging):	2KHz-20KHz
Inductance:	20mH, 200mH, 200mH, 2H, 20H

Cat Q 1559

$199

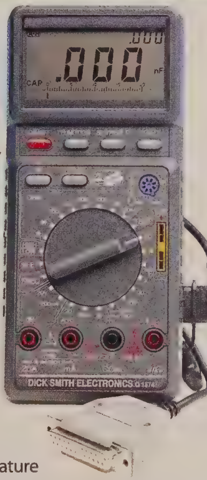
Multimeters & 240V Mains Measurements

The domestic mains supply is nominally only 240V, but momentary surge voltages well in excess of 1,000V can occur as a result of switching transients and lightning strikes.

As they are usually rated at 1,000V or less, almost all DMMs are unsuitable for use in mains supply circuits and should be used only in circuits in which their maximum ratings are unlikely to be exceeded.

Meters which are better suited to use in mains supply circuits include the Q 1563 and Q 1566 on p.156, Q 1565 on this page and the Fluke models on p.153.

3.5 Digit Multimeter



With PC Interface & True RMS. Comes complete with software and leads that allow you to hook it up to your PC for easy data transfer! Additionally, the combination of an analogue bargraph display with an easy-to-read digital display ensures highly accurate read-outs!

Features

- 3.5-digit (2000) LCD display
- True RMS
- Analogue bargraph display
- Auto Power-off
- Auto/Min/Max data hold
- Relative offset
- Memory/ Recall (up to 10 values)
- Logic Test
- Continuity & Diode Test
- Capacitance and Transistor Test
- Temperature & Frequency
- Comes complete with carry case, temperature thermocouple, PC software and RS232 cable with connector.

Ranges

DCV:	200mV, 2V, 20V, 200V, 1000V
ACV:	200mV, 2V, 20V, 200V, 750V
AC/DC Current:	2mA, 200mA, 20A
Resistance (ohms):	200, 2K, 20K, 200K, 2M, 20M
Capacitance:	2nF, 20nF, 200nF, 2uF, 20uF, 200uF
Frequency (auto-ranging):	2KHz, 20KHz, 200KHz, 1MHz
Temperature:	-40°C to 260°C (supplied probe) -40°C to 1200°C (unit)

Cat Q 1574

LIMITED STOCKS AVAILABLE

$299

Brymen 3.75/4.75 Digit Multimeter

A high quality meter, designed with safety in mind. Fast 4,000 count digital display updates 5 times per second. 10 times high resolution 40,000 count display mode updates 1.25 times per second. Dual display mode allows you to simultaneously view frequency along with other functions.

- Diode Test
- Relative modes
- Conductance mode
- Hold and memory functions
- Fast, audible continuity check
- Fast, analogue bar graph
- Superior AC noise rejection

Ranges:

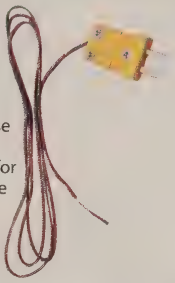
DC V:	400mV, 4V, 40V, 400V, 1,000V
AC V:	400mV, 4V, 40V, 400V, 750V
DC A:	4000uA, 400mA, 10A
AC A:	4000uA, 400mA, 10A
Resistance:	400, 4k, 40k, 400k, 4M, 40M
Conductance:	400nS
Frequency:	99.999Hz, 999.99Hz, 9.9999kHz, 99.999kHz, 250.00kHz
Capacitance:	4nF, 40nF, 400nF, 4uF, 40uF, 400uF, 4mF, 40mF

Cat Q 1565

$299

Thermometers

Thermocouple Probe



- Measures a range from -40˚C to 250˚C (-40˚F to 482˚F)
- An ultra fast response naked bead thermocouple wire, suitable for many general purpose applications.

Cat Q 1439

$\$34^{95}$

Deluxe Dual Input Thermometer

- Compact, handheld dual input digital thermometer with 4.5 digit LCD
- Offers both Celsius and Fahrenheit readings
- Beeper sounds when preset temperature limits exceeded
- Records minimum/maximum temperatures and time
- Relative mode displays difference between reading and preset value
- K-Type thermocouples supplied
- Features auto power off, data hold, dual temperature and temperature differential displays

  Unit Range: -200˚ to 1,370°C

  Thermocouple Range: -40° to 260°C

Cat Q 1437

$179

High Temperature Probe

- Measures range from -50˚C to 1200˚C (-50˚F to 2200˚F)
- 10cm Tube, 8mm Diameter
- High Temperature, Penetration and Immersion Probe

Cat Q 1438

$109

Digital Stick Thermometer

- Compact, handheld digital thermometer with 3.5 digit LCD
- Holds current and maximum readings
- Includes K-Type thermocouple probe

Specifications

Unit Range: -50˚C to 1,300°C

Thermocouple Range: -40° to 260°C

Resolution: 0.1°C or 1°C

Output: 1mV/1°C

Accuracy: -50˚C to 1,000°C: +/- (0.3% rdg + 1°C) 1,000˚C to 1,300°C: +/-(0.5% rdg + 1°C) (for operating temperatures of 18˚C to 28°C)

Probe Accuracy: +/- 2.2°C or +/- 0.75% of reading

Cat Q 1436

$125

Infrared Thermometer

Measure temperature from a distance with this portable compact unit. It features a back lit display, auto hold and auto power off functions, a 3.5 digit LCD and low battery indicator.

Temperature Range:	-20°C to 260°C
Display resolution:	1°C
Measurement rate:	2.5 times per second, nominal
Detection Element:	Thermopile
Optical lens:	Fresnal lens
Field of view:	65mm @ 1M
Response time:	1 second
Spectral response:	6 to 14mm nominal
Emissivity:	Pre-set 0.95
Overrange:	(OL) or -OL) is displayed

NEW FOR '99

Cat Q 1448

$269

Specialist Meters

Sound Level Meter

- Decibel readings for both indoor and outdoor noise monitoring
- Features 2 ranges, 40-80dB and 80-120dB
- Includes single-selection switch, low battery indicator, carrying case and operating instructions
- Suitable for monitoring traffic, aircraft noise, factories, workplaces, machinery, appliances, etc

Cat Q 1360

$159

Digital Light Meter

- Ideal for photography, dark room and video use
- Measures up to 50,000 lux over 3 ranges
- Features auto-zero function, low battery indicator and carry case
- Requires 1 x 9 volt battery for 150-200 hours continuous use

Cat Q 1400

$175

Electromagnetic Field Tester

00.1
EMF FIELD TESTER
EMF-822

- Suitable for monitoring environmental electromagnetic radiation
- Measures electromagnetic radiation generated by power lines, cables, computers, TVs, etc
- Easy-to-read 3.5 digit LCD display
- Quick and simple to use

Max indication:	199.9
Range in gauss:	0.1m to 199.9m gauss
Band width:	30Hz to 300Hz +/- (4% + 3d) at 50Hz/60Hz
Sampling time:	0.4 seconds approx

Cat Q 1225

$169

Megohmmeter

NEW FOR '99

This unit is a portable compact sized digital megohmmeter designed for simple one hand operation. This unit provides 500V to test insulation and features a back lit display, low battery indicator and auto hold and auto power off functions.

Range:	20MΩ to 2000MΩ
Resolution:	10KΩ on 20MΩ range/1MΩ on 2000MΩ range
Measurement rate:	2.5 times per second nominal
Overrange:	(OL) or (-OL) is displayed

Cat Q 1490

$229

Join the Dick Smith Electronics Direct Link Mail Order List and WIN!

Go in the draw to WIN a $200 Dick Smith Electronics' Gift Voucher, just by completing and returning this registration form before July 17th 1999.

www.dse.co.nz

A New Way To Shop

DICK SMITH ELECTRONICS
Welcome to Dick Smith Electronics New Zealand Online Store
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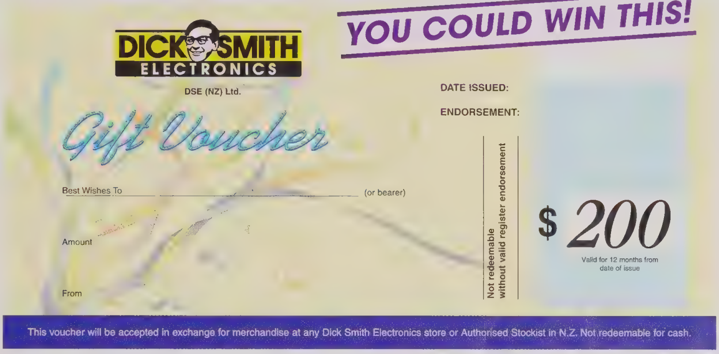
- In keeping with the changing face of technology, Dick Smith Electronics have introduced a comprehensive website designed specifically for customer home shopping.
- Our new website also serves as a perfect customer reference point for detailed product descriptions, price and availability.
- The site can be accessed anytime through the worldwide web... so this store is always open.
- Ordering online is a very simple, highly secure and incredibly convenient way to purchase from a range of over 8000 products that Dick Smith Electronics currently sells.
- Come and check us out now at www.dse.co.nz

From time to time you will receive product information (including special offers) in the mail. If at any time in the future you wish to remove your name from this list you need only to ask. As required by the Privacy Act 1993 you may also check and correct the accuracy of personal details at any time. To do so please contact our Head Office.

YOU COULD WIN THIS!


DICK SMITH ELECTRONICS
DSE (NZ) Ltd.
Gift Voucher
DATE ISSUED:
ENDORSEMENT:
Best Wishes To
(or bearer)
Amount
From
Not redeemable without valid register endorsement
$ 200
Valid for 12 months from date of issue
This voucher will be accepted in exchange for merchandise at any Dick Smith Electronics store or Authorised Stockist in N.Z. Not redeemable for cash.

The prize winner will be notified by mail on July 19th 1999. The judges decision is final and no correspondence will be entered into. The competition is not open to the employees of Dick Smith Electronics or their suppliers.

Simply complete the form, then fold and seal it with tape to form a Freepost envelope (see instructions on reverse). You need no stamp because we pay the postage.

Please write clearly in block letters

Mr/Mrs/Ms/Miss/Dr/Other (Please Circle)

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LAST NAME

ADDRESS

HOME PHONE ( )

EMAIL ADDRESS ______________________________

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Areas of Interest

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☐ Phones & Faxes
☐ Cellular Phones
☐ Computer Hardware/Software/Accessories
☐ Audio
☐ Communications – PRS, CB radios etc
☐ Toys & Learning
☐ Home Electrical
☐ Security
☐ Electronics
☐ Technical Data Information

Are you a home hobbyist? Do you enjoy tinkering with home electronics and making kitsets? ☐ Yes ☐ No

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It's just $6 incl. postage and packing. Please fill out the order form on the next page or phone us on 0800 373 347.

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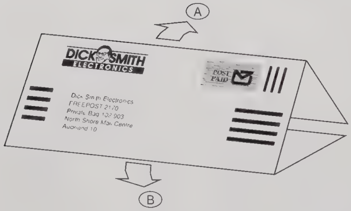
"MAILING LIST"
Private Bag 102 903
North Shore Mail Centre, Auckland 10

FOLD HERE Ⓑ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DICK SMITH ELECTRONICS
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B

FOLD Ⓑ UNDER Ⓐ AND TAPE OR STAPLE TO SEAL

Specialist Meters

Digital Map Measuring Meter

With calculator and magnifier

This handy measuring meter is a very accurate instrument for measuring distances between two points on a map, plan or physical object. Simply trace the line to be measured with the serrated driving wheel and the length measured (in either direction)

is shown on the digital display. With the aid of the built-in calculator, the actual distance can be calculated by multiplying the number by the scale of the map or drawing. Includes a magnifying glass for easier reading of maps. Needs one G13 battery (included).

Cat Q 1399

$44.95

3.5 Digit Engine Analyser

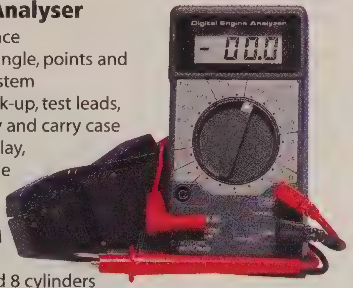
- For DIY car maintenance
- Monitors RPM, dwell angle, points and battering charging system
- Includes inductive pick-up, test leads, alligator clip assembly and carry case
- Features 3.5 digit display, diode check, duty cycle and auto polarity

Specifications

Tach:	x10 RPM
DC Current:	2A, 20A
Dwell:	4,5,6 and 8 cylinders
DC V:	200mV, 2V, 20V,200V
Resistance:	20, 200, 2K 20K, 200K, 2M

Cat Q 1556

$169.95



Promeasure Ultrasonic Tape Measure

NEW FOR '99

This sophisticated tool uses ultrasonic technology for ultra fast distance, area and volume measurements. It can measure up to 15 metres or more by using the "SUM" button. suitable for use in building, real estate, engineering,surveying and DIY at home.

- Measures distances up to 15 metres
- Adds up lengths to measure longer distances
- Conversion of readings between metric and Imperial
- Memories length, height, width, area and volume
- Calculates area and volume automatically at the touch of a button
- Automatic lock for stable readings

Measurement:	60cm to 15 metres ('sum' button required for longer distances)
Readings:	Metric/cm or imperial/inches
Ultrasonic sensor:	Electrostatic transducer by Polaroid

Cat Q 1413

$89.95

LCD Digital Callipers

A hi-tech precision tool for engineers, designers, students and the serious hobbyist. These callipers give precise measurement of the external and internal diameter of just about anything from 0.01mm to 150mm. With metric/imperial conversion, zero setting for measuring deviations, accuracy of 0.03mm and repeatability of 0.01mm. As well, it has an automatic 'off' function and more!

Cat Q 1412

$195

Air speed/temperature meter

A highly accurate wind speed and temperature meter producing an easy-to-read digital temperature display in ˚C or ˚F, wind speed in metres-per-second or feet-per-minute. Great for boating, aviation, sports and science projects. Complete with Carry Case & instructions. Requires 1 x 9 Volt battery.

Cat Q 1411

$225

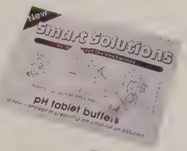
pH Meters

pH-7 Calibration Buffer Tablets

For use with your pH meter, these buffer tablets create and maintain a stable pH in the solution and standardise electrodes for pH measurements. Comprehensive instructions included. Come in a pack of 5.

Cat Q 1408

$9.95



Soil/Plant pH Meter

This Soil/Plant pH meter is specially designed to check the condition of the soil in gardens and pot plants. This will simply tell you if the soil needs pH adjustment.

Cat Q 1392

$24.95

ACID
ALKALINE
pH Tester

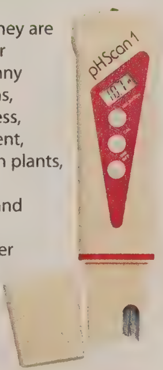
Digital pH Meter

The pHScan measures pH almost anywhere. They are lightweight and compact enough to fit in your pocket. Use them to check water quality in many areas such as swimming pools, spas, aquariums, aquaculture, hydroponics, photographic process, cooling towers, water and wastewater treatment, boiler/steam generators, car washes, sanitation plants, ecology studies and lab applications.

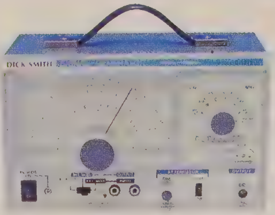
- Microprocessor makes readings fast, stable and repeatable
- Auto-off, freeze function and automatic buffer recognition
- Splash proof membrane keypad
- Accurate and easy-to-use
- Used even in laboratories

Cat Q 1404

$169



Wideband RF Signal Generator



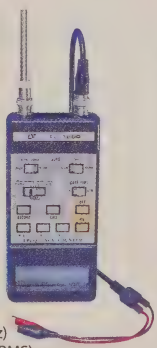
Ideal for hobbyists, amateurs and servicemen. It has a frequency range of 100kHz to 150MHz in 6 ranges making it ideal for checking and aligning IF circuits in tuners and TV sets plus all the other service and development work you'd like to tackle.

Specifications

RF frequency Range:	100kHz - 150MHz in 6 ranges (up to 450MHz using 3rd harmonics)
RF Output Level:	At least 100mV up to 35MHz
RF Output Impedance:	<500 ohms on high output 75 ohms on low (approx)
Int. Modulation:	AM, 1kHz, 30%
Ext. Modulation:	AM, 50Hz - 15kHz, <1Vrms for RF >30MHz
AF Output:	1kHz, >1Vrms
AF Output Impedance:	Approx. 10K ohms in series with 10uF

Cat Q 1312 **$299**

1.25 GHz Hand-Held Digital Frequency Counter



Ideal for measuring radio frequency transmissions and servicing stereos, videos, computers and cordless phones. This incredibly easy-to-use 10Hz to 1.25GHz frequency counter has an 8-digit LCD display, data hold, relative management and data record (min, max & average). There's also selectable resolution, period measurement and more. Comes complete with telescopic antenna and BNC to alligator-clip test leads.

Specifications

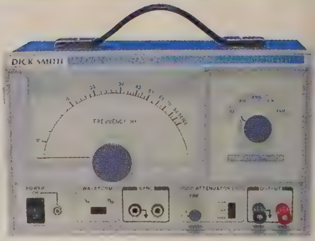
Measuring Range:	10Hz to 1.25 GHz	
Impedance:	1M ohm	
Accuracy:	+/- (1PPm + 1d)	
Range:	Channel A:	500MHz/1250MHz
	Channel B:	10MHz (10Hz to 10MHz)
Typical Sensitivity:	Channel A:	10-1000 MHz (3-50mV RMS) = 1-1.25GHz (10 - 150mV RMS)
	Channel B:	10Hz - 1MHz (15mV RMS) 1MHz-5MHz (20mV) 5MHz-10MHz (40mV)
Max Voltage:	Channel A:	5V P-P
	Channel B:	250V P-P

Cat Q 1322

Limited Stock Available

$199

AF Signal Generator



An audio frequency generator like this one is an essential tool for working on many circuits. With a wide 10Hz to 1MHz output and high accuracy, our signal generator is sure to become an important part of your test equipment arsenal. Team it up with our RF generator and soon it'll become one of your most important tools.

Specifications

Freq. Range:	10Hz to 1MHz
Accuracy:	+/-3% +2Hz
Output Impedance:	470 - 1100 ohms unbalanced
Output Control:	0, -20db, -40db approx. Plus fine adjustment
Sine Wave Output-	
Range:	10Hz to 1MHz
Output:	>7.8Vrms unloaded >4.3Vrms into 600ohms
Distortion:	<0.1% 500Hz - 50kHz

Square Wave Output-
Range:
10Hz to 10kHz
Output Voltage:
>15Vp-p unloaded
>6Vp-p into 600ohms
Rise Time:
<0.5uS into 600ohms in parallel with 400pF

Cat Q 1310 **$299**

Benchtop Power Supply 0-30V DC5 Amp Max

Well constructed and nicely finished in matt black. This power supply will give years of faithful service to hobbiest amateurs and servicemen. It has a fully adjustable voltage range from 0-30V DC, coarse adjustment. An output current range from 0 to 5 Amps.

Output Voltage: 0 to 30 Volts DC, Coarse adjustment. **Voltage Regulation:** Line Voltage 210 to 240 Volts AC: <0.02%+2mV. Load (No load to Full load) <=0.02%+5mV. **Ripple Voltage:** Peak to Peak <=4mV. RMS <=2mV. **Output Current:** 4 Amps at 0 to 15 volt (Typical). 2.5 Amps at 15 to 30 volts (Typical). **Protection:** Current limiting. **Metering VU Type:** Voltmeter, Ammeter. Range 0 to 35 Volt +/-5%. 0 to 5 Amp+/-5%. **Power Consumption:** Approx. 200W or less at Full Load. **Temperature Range:** Operation 0 to 25 Deg C. Storage :-15 to +70 Deg C. **Dimensions (HxWxD)** 120mm x230mmx300mm.

Cat Q 1746 **$329**

1.3 GHz Universal Counter

You can rely on this 9 digit Universal Counter for quick and accurate measurement of a wide range of frequencies. Packed with unique features, it has the precision and specifications for top performance, plus its high resolution and fast response time make it a must for the workshop.

Cat Q 1316 **$399**

Specifications:

Channel	**A**	**B**	**C**
Range			
(DC coupled)	0.05Hz-120MHz		
(AC coupled)	5Hz-120MHz	10Hz-2.5MHz	50MHz-1.3GHz
Sensitivity	25mV RMS Sine to 50MHz	TTL level	TTL level
	35mV RMS Sine to 80MHz	–	–
	70mV RMS Sine to 100MHz	–	–
	250mV RMS Sine to 120MHz	–	–
Impedance	1M ohm (nominal) (shunted<40pf)	<100K ohms (shunted <100pF)	50 ohms
Period	8.3nS to 20 seconds	–	–
Totalise	0 to 199999999	–	–
Ratio/Diff	1Hz to 120MHz	10Hz to 2.5MHz	–
RPM	3RPM to 2099994RPM	–	–
Pulse Width	0.1nS to 66666.6nS	–	–
Duty Cycle	0.01% to 99.99%	–	–

Features:

- Gate time 0.1sec or 1sec
- Crystal locked time base
- Data hold
- Maths Function
  - Offset (addition & subtraction)
  - Normalise (divide)
  - Scale (multiply)
  - Min/max/average readings
- Day & time display - 2 sec to 99 days
- Stop watch display - 0.2 sec to 100hrs

Measurements:

- Frequency • Period
- Totalise • Frequency Ratio
- Frequency Difference • RPM
- Pulse Width • Duty Cycle

Limited Stock Available

Dual Trace, Dual Trigger 20MHz CRO

WITH TWO PROBES

Affordable 20MHz oscilloscope suits a wide range of applications. Dual trace, dual trigger CRO with fully adjustable sweep time (in 20 steps), variable hold-off, fully adjustable sensitivity, switch selectable X-Y operation, selectable trigger modes, AC/TV H/TV V trigger coupling, front-panel variable trace rotation & sweep rate from 10nS/DIV to 1S/DIV.

Specifications

Vertical Sensitivity:	5 mV/div to 5 V/div (x1 mode) 1 mV/div to 1 V/div (x5 mode) 1-2-5 sequence, 10 step attenuator
Sweep Speed:	0.1 us/Div to 0.2 s/Div in 1-2-5 sequence, 20 steps
Sweep Magnification:	10X
Rise Time:	Approximately 17.5ns
Operating Modes:	Ch1, Ch2, Alt, Chop, Trigger Coupling: Auto, Norm, TV-H, TV-V
Trigger Sensitivity:	Internal: 1.5 division (1.0 division with TV coupling) External: 500mV
Trigger Source:	Ch1, Ch2, Alt, Ext, Line

Cat Q 1802

$799

Dual Timebase Full Featured 20MHz CRO

The perfect choice for design, fault finding and repair applications. Quality features include a beam-finder so you can bring the trace pattern back onto the screen instantly, dual time base for more accurate timing measurements, switch selectable X-Y axis, variable hold-off time, sweep magnification (x10) which allows you to extend the sweep speed up to 10ns/div, front-panel adjustable trace rotation and advanced triggering capabilities. Also has an adjustable illuminated grid and an inbuilt component tester for capacitors, inductors, transistors, diodes, zeners, etc. Complete with two probes.

Specifications

Sensitivity:	1mV/Div - 1V/Div (10MHz, -3dB) x 5 gain select. 5mV/Div - 5V/Div
Rise Time:	Approx. 17.5nS
Sweep Speed(Main & Delay):	0.1us/Div - 0.2s/Div, 1-2-5 sequence, 20 steps.
Sweep Magnification:	10X
Operating Modes:	Ch1, Ch2, Alt, Chop
Trigger Coupling:	Auto, Norm, TV-V, TV-H
Trigger Source:	Ch1, Ch2, Alt, Line, Ext.

Cat Q 1804

WITH TWO PROBES

$999

With Component Tester! 60MHz Dual Timebase CRO

Essential for anyone working on CB radios, high frequency transceivers & high speed computers. With dual-time base, make more accurate timing measurements and compare portions of a signal at two different sweep speeds. Also get jitter-free triggering of delay sweeps & front-panel adjustable trace rotation. Beam Finder finds the trace on the screen at the touch of a button. Test capacitors, inductors, diodes, transistors, Zeners, etc easily & quickly. Adjustable screen grid illumination means you can use in it virtually any lighting situation. Comes with two probes.

Specifications

Sensitivity:	1mV/DIV - 1V/DIV (15MHz, - 3dB), x5 gain selected. 5mV/DIV - 5V/DIV
Rise Time:	Approx. 5.8nS
Hold-Off Time:	5:1 continuously variable
Main Sweep Speed:	0.1us/DIV - 0.2s/DIV in 1-2-5 sequence, 23 steps
Delay Sweep Speed:	0.1us/DIV - 0.2s/DIV in 1-2-5 sequence, 23 steps
Sweep Magnification:	10X
Operating Modes:	Ch1, Ch2, Alt, Chop.
Trigger Coupling:	AUTO. NORM, TV-V, TV-H
Trigger Source:	CH1, CH2, ALT, LINE, EXT.

Cat Q 1806

WITH TWO PROBES

$1399

Universal CRO Probes

Universal probes with wandering earth leads and insulated shrouds. Both come complete with a handy pouch.

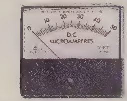
	60MHz Probe	100MHz Probe
Working Voltage:	600V AC p-p (x10)	600V AC p-p (x10)
Input Capacitance:	170pF(x1), 27pF(x10)	150pF(x1) & 18pF(x10)
Input Resistance:	9M ohm (x10)	9M ohm (x10)
Bandwidth:	60MHz	100MHz
	Cat Q 1247	Cat Q 1249
	$39.95	**$54.95**

Standard Meters

MU-45 type meters already adapted to suit almost any requirement with shunts and multipliers. With full scale accuracy better than or equal to 2.5%. All have mechanical zero adjustment. Nuts and washers supplied.

MU-45 Type Dimensions

Scale area:	55 x 30mm	Mounting hole:	45mm
Overall:	58 x 52mm	Bolt holes:	38mm centres x 3mm bore


D.C.
MICROAMPERES

0-50uA
Internal Resistance:
3,500 ohms
Cat Q 2021
$27.50

D.C.
MILLIAMPERES

0-1mA
Internal Resistance:
200 ohms
Cat Q 2011
$27.50

0-1A
Internal Resistance:
0.05 ohms
Cat Q 2025
$27.50

0-3A
Internal Resistance:
0.025 ohms
Cat Q 2028
$27.50

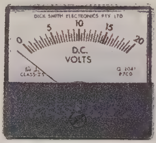
0-5A
Internal Resistance:
0.015 ohms
Cat Q 2031
$27.50

0
2
4
6
8
10
D.C.
AMPERES

0-10A
Internal Resistance:
0.008 ohms
Cat Q 2033
$27.50

DICK SMITH ELECTRONICS PTY LTD
0
5
10
15
20
D.C.
AMPERES

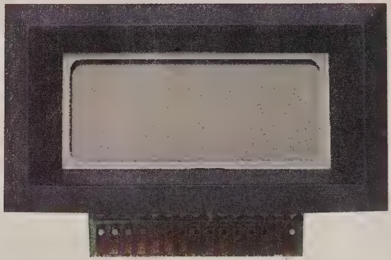
0-20A
Internal Resistance:
0.004 ohms
Cat Q 2036
$27.50


DICK SMITH ELECTRONICS PTY LTD
0
5
10
15
20
D.C.
VOLTS

0-20V
Internal Resistance:
1K ohm/volt
Cat Q 2041
$27.50

DICK SMITH ELECTRONICS PTY LTD
0
10
20
30
D.C.
VOLTS

0-30V
Internal Resistance:
1,000 ohm/volt
Cat Q 2042
$27.50



3.5-Digit LCD Panel Meter

With 'full scale' of 200mV or 2V (user selectable) and a high input impedance (100M ohms). It can be self mounted and includes a mounting bezel. Comes with a comprehensive data sheet.

Features

- Single supply rail (9V)
- Low supply current (2mA max)
- Auto zeroing and over-range in-built
- Meter size: 71 x 46 x 21mm

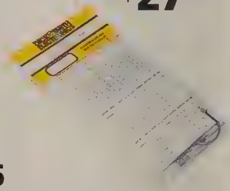
Cat Q 2200
$59

Universal Meter MU – 45 Type

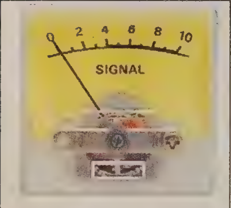
DICK SMITH ELECTRONICS PTY. LTD.
0
2
4
6
8
10
0
1
2
3
CLASS-2.5
Q-2047
P700

Combined with our Shunt Pack, this versatile universal 100uA panel meter can be easily adapted for almost any scale variation of volts, amps, ohms, etc. Operates over the range 100uA - 316mA &1V - 100V.
Internal Resistance: 3,500 ohms
Full Scale Accuracy: 2.5% or better (Class 2.5)
Case Dimensions: 58mm wide x 52mm high
Cat Q 2047
$27.50

Shunt Pack

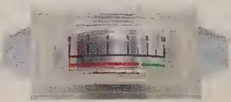


Designed for the above panel meter, but handy for most meter conversions. Comes with shunt resistors from 1.1 to 1,000,000 ohms, resistance wire and instructions.
Cat Q 2046
$2.95


0
2
4
6
8
10
SIGNAL

Level Meter

Particularly suitable for AM/FM tuner & receiver projects. Scale size: 34 x 17mm (same size cutting required). Impedance 1K. Straw-coloured meter face, looks great back-lit. Signal Strength: 250uA FSD.
Cat Q 2100
$14.95



Edge Level Meter

As used in many cassette players & amplifiers. Graduated 1 to 10 with "battery check" strip under the main scale. Scale size: 32 x 10mm. Mounts with 2 screws, hole centres 49mm. 500uA FSD, 450 ohm internal resistance.
Cat Q 2110
$14.95

Discover the exciting world of Electronics

With a kit from Dick Smith Electronics

OVER 25 YEARS OF EXPERIENCE

Here's Why:

We make it as easy as possible for you, with quality components, superior design, clear, concise instructions and exceptional value for money. Put it all together and you'll see that Dick Smith Electronics kits are the best in the business.

You Get Only Brand New Prime-Grade Components

Unlike other kit suppliers who sometimes slip in manufacturer's seconds or sub-standard components, we always give you the best.

Guaranteed Quality

Every kit carries a Quality Control card, so you know that it has been thoroughly checked before it gets to you.

Proven Designs

We test-drive every kit and catch the bugs before you do so you won't get any nasty surprises. In fact, we find and rectify faults other kit-sellers never pick up.

Our Kits Are Very Well Packaged

We take care in packaging our kits. All new boxed kits are shrink-wrapped which means you can be sure that all the components we supply are securely enclosed within the box.

Easy-To-Follow Instructions

We take great care to lay out instructions in a clear easy-to-follow format. What's more, each kit contains our exclusive Guide to Kit Construction leaflet to end the "where do I start" blues – even for beginners.

We Put Safety First

You can see before you buy them which kits are mains-powered. Plus, just to be sure, all mains powered kits are supplied with our exclusive Mains Safety Guide.

Spare Parts Back Up

That's right, even the special and hard-to-get parts. If you need a spare part for any current kit, ask at your nearest store and they'll get it for you!

We Take The Hard Slog Out Of Building Kits

Let's face it, most kit builders are handier with a soldering iron than a drill or saw. That's why many of our kits have pre-drilled holes, pre-cut slots and pre-printed panels.

No Risk, Money-Back Guarantee

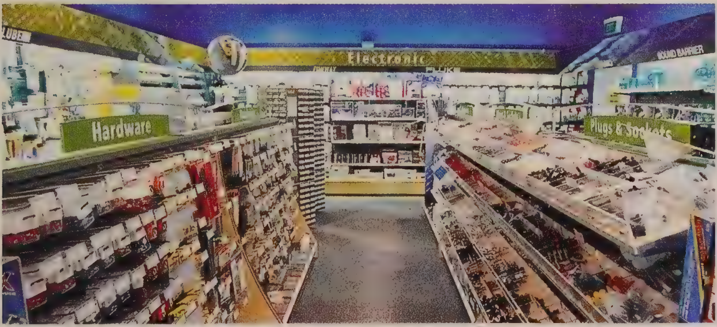
Should you think a kit is too difficult, return it to us within 7 days with a receipt and, if you haven't opened any of the inner packs, you'll get a full money-back refund.

We Take Pride In Our Kit Range

Our range of kits is not only the largest around, it's the best! In fact, you'll find a kit to suit everyone from the absolute beginner to the highly experienced. What's more, our range is constantly being upgraded as new kits are released in magazines.

Our Kits Are Graded

All our kits are graded with our Degree Of Simplicity symbol. Follow the simple guide (below) and you'll know, even before you start, if the kit is right for your level of expertise.



As our kits of many different parts from numerous suppliers, sometimes problems can arise in obtaining all of the parts. This means there is a slight chance that availability may be delayed. Rainchecks are available, however, if you'd like to check beforehand, please don't hesitate to contact your local store.

DEGREE OF SIMPLICITY

Simple ☀	Designed for kit builders with little experience – you only need to know how to solder and the basic principles of electronics.
Intermediate ☀ ☀	These are slightly more complex kits which require a bit more skill, and a reasonable knowledge of electronics and electricity.
Detailed ☀ ☀ ☀	These are for kit builders who know it all – they involve virtually all aspects of electronics and electricity.

MAINS WARNING!

Kits marked with this symbol involve 230V AC mains power wiring. Please note that handling, testing and operating mains powered equipment can be dangerous when basic safety rules are not followed. If you're inexperienced or not confident in working with mains powered circuits, we strongly recommend that you DO NOT attempt these kits!

SAFE FOR KIDS!

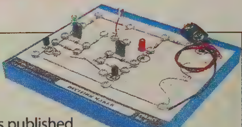
Used by schools and colleges throughout New Zealand!

Electronics For Beginners

FUNWAY 1
INTO ELECTRONICS
Volume
LEARN ELECTRONICS THE FUN WAY!
Written by Dick Smith
DICK SMITH ELECTRONICS

Book Only
Cat B 2600
$7^95

Our best selling electronics course for beginners is used as an introductory textbook in countless schools and colleges throughout the country. Funway 1 assumes you know absolutely nothing about electronics. It shows you what the components look like, how to connect them into the circuit, even how to go on with further experiments with your circuits when they are finished. For safety there's no soldering and no dangerous voltages to play with.



Please Note
These kits do not include instructions.
All information is published in **Funway 1 Book (B-2600)** – which is necessary before construction can begin on any kit. Not suitable for children under 3 years of age - contains small parts.

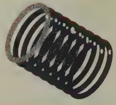
Funway 1

DICK SMITH
ELECTRONIC PARTS FOR THE PROFESSIONAL & ENTHUSIAST

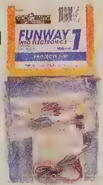
Spring Terminals (Optional)

- Designed especially for Funway 1 Kits.
- Makes connecting and disconnecting components a breeze.

Cat K-2602
$4^50pk



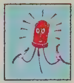
Funway 1 Project Kit 1–10



- Supplied with all components necessary to build any one of the first ten projects.
- No soldering required, so parts can be reused to build the next project. All projects are battery powered so they're safe – even for the youngsters!

Cat K 2600
$16^95

1. Continuity Indicator



Just like a multimeter - it will show if you have a complete circuit or an open circuit. A Light Emitting Diode (LED) will glow if the circuit is complete.

2. Transistor Tester

As well as telling you if your transistor is okay, it shows you how transistors work.

3. Water Indicator

Are your plants thirsty? This simple circuit will tell you how much water is in the soil.

4. Light/Dark Indicator

Using a light dependent resistor, it will light an LED if light falls on it. This type of detector is used in some alarms.

5. Flasher

Want to add flashing lights to a model train layout? This project will do it for you!

6. Electronic Siren

A mini version of the siren on police cars. Fantastic to add to toys!

7. Music Maker

Your own electronic organ! Play your own tunes!

8. Dog & Cat Communicator

Dogs and cats can hear sounds that human beings can't hear. With this great dog and cat communicator, you might be able to 'talk with the animals'!

9. Decision Maker

As used by top executives and politicians. Just press the button and it will decide Yes or No!

10. Morse Code Indicator

Amateur radio operators send Morse Code all over the world. Now you can learn the code too, and send secret messages.

Funway 1 Project Kit 11–20

DICK SMITH
FUNWAY 1
INTO ELECTRONICS
PROJECTS 11-20

- Contains the more specialised components required to build any of the last ten projects (11-20) in Funway 1.
- As with the first ten projects, there is no soldering and no dangerous voltages.

Note: You will also need the K-2600 (1-10) kit above to build these projects.

Cat K 2610
$16^95

11. Sound Effects Generator

Ever wondered how many of those sound effects are made in the movies? Build this, and you can make some of your own!

12. Crystal Set

Free radio! No batteries to buy, nothing to turn off. Listen in to your favourite station!

13. One-Transistor Amplifier

Build your own amplifier! Can be used with the Crystal Set and other projects!

14. Beer-Powered Radio

Yes, it actually runs on beer – or fizzy drink! Listen in, but don't drink the battery.

15. Two-Transistor Amplifier

Even more power – enough to drive a speaker, so you can listen in without headphones!

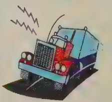
16.The Simplest Transmitter In Town

Allows you to transmit Morse Code across the room.

17. Voice Transmitter

Imagine being able to transmit your voice to a radio set! This project makes it easy.

18. CB Radio Receiver



Listen-in to the truckies and other CBers, you don't have to spend a fortune on a CB.

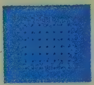
19. Amateur Radio Receiver

A radio receiver to listen in to ham operators and other stations in the 2-6MHz bands.

20. Radio Booster Amplifier

A radio frequency amplifier to give other radios even better reception!

Plastic Breadboards



Expand your Funway 1 projects into bigger and better things with extra plastic breadboards.

Cat H 4050
$3^95

With 20 new projects to try out

Funway 2 takes over where Funway 1 leaves off!

These projects are all built the modern way, on printed circuit boards, which means all components are soldered into position, so you'll need a soldering iron. Funway 2 teaches you how to solder, how to avoid the pitfalls and how to use a multi-meter. The projects have been specially chosen to be practical and they're battery operated and very safe. Plus, there are printed labels to make your circuits look really professional.

* Photograph illustrates 'Electronic Dice' (K-2625)

Parents Note

All Funway kits use battery power, so there are no dangerous voltages. However, Funway volume 2 involves soldering, which may require supervision if attempted by younger children. Not suitable for children under 3 years of age - contains small parts.

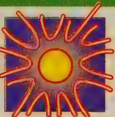
FUNWAY 2
INTO ELECTRONICS
Volume
LEARN ELECTRONICS THE FUN WAY!
Written by Dick Smith
DICK SMITH ELECTRONICS

Book Only
Cat B 2605
$\$9^{95}$

Funway 2

FUNWAY 2 KITS Something here for everyone! Simple, economical and fun!

1. Flasher



- Great for electronic jewellery.
- Or use it as a burglar warning light, etc – the choice is yours!

Cat K 2621 $\$7^{50}$

2. Ding Dong Doorbell

- Sounds just like an old-fashioned doorbell.
- A simple project to build for your home.

Cat K 2622 $\$14^{95}$

3. Morse Code Trainer

- Build this simple trainer and learn about morse code.
- Now you can tap out those secret messages to your friends.

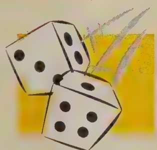
Cat K 2623 $\$22^{50}$

4. Universal Timer

- Are the eggs too hard? Then time them with this handy little device.
- Can be set for as little as a few seconds to about 15 minutes.

Cat K 2624 $\$17^{50}$

5. Electronic Dice



- Just as much fun using it as it is building it.
- It really randomly picks – there's no cheating with these dice!

Cat K 2625 $\$14^{95}$

6. Mini Organ

- Play a tune – it's easy!
- Uses the back of the PCB as the keyboard.

Cat K 2626 $\$17^{50}$

7. Pocket Transistor Radio

- A fun way to teach yourself about the fundamentals of radio.
- Build your own receiver and then have fun using it.

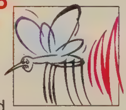
Cat K 2627 $\$18^{50}$

8. Touch Switch

- Ever wondered how those lift-buttons work? Build this touch switch and you'll be able to work it out.
- A variety of functions clearly explained.

Cat K 2628 $\$14^{50}$

9. Mosquito Repeller



- Do mozzie repellents really work?
- Build this and you'll find out how and why.
- You won't hear it but the mozzies certainly will! Based on university research.

Cat K 2629 $\$14^{95}$

10. Audio Amplifier

- Use it to make the intercom (Project 18), or as a general purpose amplifier.
- It's handy and has great sound output.

Cat K 2630 $\$14^{95}$

11. Wireless Microphone

- Transmits to any standard FM radio – even one in another room or next door.

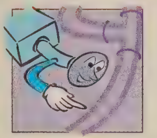
Cat K 2631 $\$14^{95}$

12. Light-Activated Switch

- Useful in many security applications around the home.
- If a light goes on, the switch activates.
- You can even use it to trigger a burglar alarm.

Cat K 2632 $\$12^{50}$

13. Metal/Pipe Locater



- Extremely handy for locating pipes, wires, etc, in walls before drilling holes.
- A simple circuit that's effective.

Cat K 2633 $\$14^{95}$

14. Sound-Activated Switch

- Activated by sound.
- Use it as a telephone bell extender without breaking phone regulations.

Cat K 2634 $\$16^{95}$

15. Home/Car Alarm

- By constructing this simple circuit you will learn the basics of alarms.
- Use it to protect your home or car.

Cat K 2635 $\$17^{50}$

16. Electronic Siren

- Just what you need with the alarm above.
- Also makes a terrific sound effects circuit.

Cat K 2636 $\$13^{95}$

17. LED Level Display

- Hook it up to your stereo and it can warn you of dangerous overloads.
- Looks great too! LEDs light up in time to the music!

Cat K 2637 $\$14^{95}$

18. Intercom Unit

- Build your own intercom and use it around the home.
- Practical and simple to build.
- Try it with the intercom amplifier (K-2630).

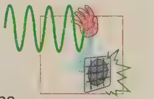
Cat K 2638. $\$19^{95}$

19. LED Counter Module

- A perfect introduction to integrated circuits.
- Can be adapted to a huge variety of counting applications.
- Fun to build

Cat K 2639 $\$19^{95}$

20. Shortwave Receiver



- You'll be able to tune into a variety of shortwave stations.
- Or with simple modifications, listen to emergency services and amateur broadcasts!

Cat K 2640 $\$17^{95}$

Please Note

These kits DO NOT include instructions. All information is published in **Funway 2 Book (B 2605)** - which is necessary before construction can begin on any kit. Cases shown are not included in basic kits.

FUNWAY 1
INTO ELECTRONICS
GIFT BOX
LEARN ELECTRONICS THE FUN WAY
DICK SMITH ELECTRONICS

Funway 1 Gift Box

As used in schools and colleges

Schools and colleges throughout New Zealand use Funway 1 as a practical and fun educational aid. With no dangerous voltages or soldering, the Funway 1 Gift Box makes an ideal gift for children or adults. Comes with all components, our specially manufactured reusable plastic 'breadboard' and the Funway 1 Book.

K 2605

$39.95

FUNWAY 1 INTO ELECTRONICS
STARTER PACK
DICK SMITH

Funway 1 Into Electronics Starter Pack

20 exciting projects to build

Want to learn about electronics, but haven't a clue about where to start? Then the Funway 1 Starter Pack is for you! It comprises 20 fascinating kits, is completely safe (no soldering required) and assumes no prior knowledge of electronics. Includes:

- Funway 1 book
- Morse keyer
- Side cutters
- 2 plastic breadboards
- Components
- Screwdriver
- 9V battery

K 2607

$69.95

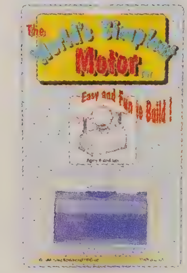
DICK SMITH
SOLDERING IRON
FUNWAY 2
INTO ELECTRONICS
LEARN ELECTRONICS THE FUN WAY
Written by Dick Smith
FUNWAY 2
WIRELESS MICROPHONE

Funway 2 Gift Pack

Designed for the beginner, includes a Funway 2 book, soldering iron, solder and 9V battery. Wireless microphone kit to transmit voice or music to a standard FM radio.

K 2620

$59.95


The World's Simplest Motor
Easy and Fun to Build!

World's Simplest Motor

It's easy and fun to assemble. Just wind the small diameter coil and place across the convenient stand. Uses 1 x D cell battery.

K 1046

$12.50

TECHNOKITS
THESE EASY TO ASSEMBLE KITS TEACH YOU THE WORLD OF SCIENCE & TECHNOLOGY - NO SOLDERING REQUIRED
MW IC RADIO
Tunes in local radio stations with case

Medium Wave Radio Kit

Now kids (aged 8 and over) can construct their own radio! Requires just 1 x AA battery and comes complete with all parts.

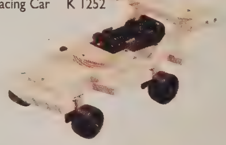
K 1016

$19.95

Electro-Mechanical Kits

Hours of creative fun for kids. Includes pre-cut, pre-drilled wood, motor and battery clip. Choose from a walking dinosaur and a racing car that really goes.

Dinosaur	K 1250
Racing Car	K 1252



$19.95

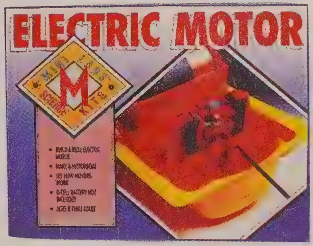
CRYSTAL RADIO
MINI LABS SCIENCE KITS

Crystal Radio

Learn the similarities and differences between crystal and regular radio. Build your own crystal radio and then have fun with it. No power required, comes complete with crystal diode, coil tube, connecting wire, base and earphone.

K 1015

$24.95


ELECTRIC MOTOR
MINI LABS SCIENCE KITS

Electric Motor Kit

With motorboat!

Build an electric motor and actually install & run a model boat. Ideal for junior boat designers from 8 years up. Teaches you the basic principles of electromagnetism. Uses 1 x D cell battery.

K 1010

$24.95

Digital Multimeter

With 3.5 digit display, comes supplied with all components, hardware, PCB, multimeter, plastic case, LCD display, 9V battery and test leads Measures voltage AC/DC, DC current to 10amps, resistance 200R to 2000K. Features diode, continuity and transistor test.

K 1044 SILICON CHIP

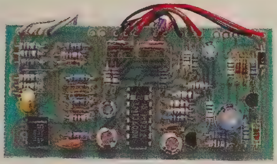
$32.95

DISCOVERY SERIES

Discover the exciting world of electronics with our discovery series!

All PCBs come solder-masked with screened component overlays.
Each kit is supplied complete with easy-to-follow instructions.

Exclusive to Dick Smith Electronics



Wave Form Generator

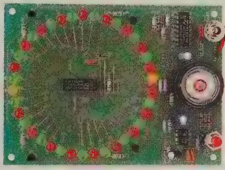
• Frequency range: 10Hz to 100KHz • Both amplitude and frequency are voltage controlled • Combine two of these to make an audio sweep generator• On board voltage regulation to ensure good stability • Power source required: 9 volt battery or any DC supply between 8.5 and 15 volts • Supplied with components, PCB and hardware such as pots and switches **• Case optional (use H 2851)** • PCB size: 43mm x 87mm

Cat K 2802 $\$27^{50}$

Parallel Port Interface

• Connects to a parallel centronics printer port on your computer • Able to sense data, process it and use the results to control relays, motors, solenoids etc • Monitors 10 analogue voltages • Drive 8 digital outputs • Generates 2 variable voltages • Includes simple programs that can be manipulated to suit your needs • Power source required: 9 volt battery or DC supply • Supplied with components, PCB and 25 pin "D" type connector **• Case optional (use H 2851)** • PCB size 68mm x 145mm

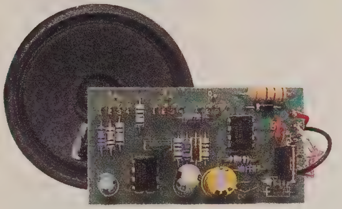
Cat K 2805 $\$49^{95}$



Roulette Wheel

• Just like running your own mini Casino • Has two zeros (0 &00) and 36 numbers • Simply press the button to set the ball rolling • Makes a clicking sound as each number is passed, imitating a ball rolling over pockets• Power source required: 9 volt battery • Supplied with components, PCB and necessary hardware such as mini speaker and switches. **• Case optional (use H 2852)** • PCB size: 91mm x 124mm

Cat K 2804 $\$34^{95}$



Siren Generator

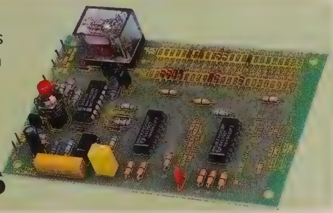
• Create four different siren sounds • Power source required: 6 or 9 volt battery • Supplied with components, PCB and hardware such as switches, battery snap and speaker **• Case optional (use H 2853)** • PCB size: 33mm x 62mm

Cat K 2801 $\$27^{50}$

Multi-Timer Module

- Timing range between 0.1 sec. and 19.4 days
- Can be configured for single cycle operation or for continuous repeat until reset
- Power source required: 9V – 12V DC
- Supplied with components and PCB
- **Case optional (use H 2851)**
- PCB size: 74mm x 113mm

Cat K 2807 $\$34^{95}$



Mini Stereo Amp

• Can be used for either stereo or bridge (mono) applications • Power source required: 9 volt battery • Supplied with components and PCB **• Case optional (use H 2855)** • PCB size: 22mm x 50mm

Specifications

Power supply range: 1.8 to 15 volts

Frequency Response

Stereo: 50Hz - 130kHz into 8 ohms

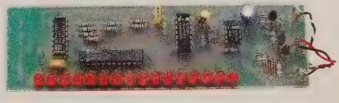
Mono (bridge):70Hz - 20kHz into 8 ohms

Sensitivity

Stereo: 30mV input for 1W/ch at Vcc = 9V

Mono (bridge):80mV input for 2W output at Vcc = 12V

Cat K 2806 $\$17^{50}$



Flash, Dash Or Crash

• An exciting game of patience, coordination and skill • Uses 16 LED's which operate in sequence • The game requires you to 'climb' the ladder of LED's by pushing a button • Has automatic power cut-off • Power source required: 4 x 'AA' batteries • Supplied with components and PCB **• Case optional (use H 2851)** • PCB size: 43mm x 150mm

Cat K 2800 $\$27^{50}$

Fibre Optic Audio Link

• Great for applications where interference-free data is required • Has provision for both microphone and an auxiliary input • Suitable for high level signals such as VCR, tuner and tape recorder outputs • Power source required: 9 volt battery • Supplied with components, PCB, Mic insert, 4 metres of fibre optic cable and a pair of transmitter and receiver devices **• Case optional (use H 2855)** • PCB size: 23mm x 78mm

Cat K 2803 $\$54^{95}$

DISCOVERY SERIES

Regulated Power Supply

- Regulated output 1.2 volts to 37.5 volts
- Current - 1.5 amps
- With built-in current and overload protection • Can be configured as a fixed or variable voltage regulator, voltage regulator with programmable current limiting, combined voltage/current limiting (for lead/acid battery charging) or constant current source (for NiCad battery charging) • Power source required: 4 to 28 Volts AC • Supplied with components and PCB • **Case optional (use H 2743)**
- PCB size: 50mm x 50mm

K 2808

$24.95

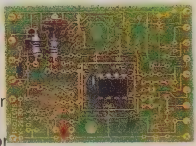
Stereo Pre-Amp

- Upgrade your bare power amplifiers into a complete audio system with this quality pre-amp • Features volume, bass, treble and balance controls
- Circuit provides an extra input to both channels that can be used for either multi-channel mixing or gain control applications
- Frequency response: 4Hz to 80KHz • Input Impedance: 40K ohms • Output Impedance: 100 ohm • Voltage gain: 3.5V/V (11dB)
- Power source required: 9 volts to 36 volts
- Supplied with components, PCB and pots
- **Case optional (use H 2852)**
- PCB size: 56mm x 122mm

K 2811

$39.95

Multi 555 Timer



- Circuit uses a 555 timer IC as a building block for timer projects
- Allows a timer or pulse generator to be quickly and cheaply put together with just a few parts • Capable of operating relays directly • Comprehensive instructions showing many circuits and overlays for different timing configurations • Power source required: 4.5V – 16V DC
- Supplied with components and PCB
- **Case optional (use H 2855)**
- PCB size: 44mm x 61mm

K 2813

$24.95

Xenon Flasher

- Once constructed makes a handy bike or hazard lamp
- Great as an emergency beacon, strobe for parties or just something to impress your friends • For an even brighter light, an optional torch reflector can be used
- Features variable flash rate via trimpot adjustment • Power source required: 9 volt battery • Supplied with components, PCB and mini linear xenon tube • **Case optional: (use H 2853)** • PCB Size: 40mm x 82mm

K 2809

$39.95

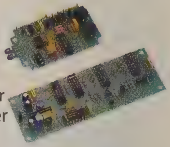
Light Sequencer

- Can be used as a simple light sequencer or light chaser for decorations, party lights or advertising signs • Four lamp outputs are provided • Drives either filament lamps or LED's up to 2 amps
- Total channel output of 24 watts • Power source required: 8 volts to 18 volts DC
- Supplied with components, PCB and hardware items • **Case optional (use H 2851)** • PCB size: 83mm x 130mm

K 2812

$39.95

Infrared Remote Control



- 4-channel infrared remote control • With hand-held transmitter and matching receiver
- Features selectable security code to give immunity against false triggering and prevent operation by other transmitters • Receiver has 5 outputs which are all capable of directly driving relays • Data outputs can be made to operate in either momentary or toggle (push/on - push/off) mode • Transmitter range - 15 mtrs (typical) • Power source required: Rx - 8 volts to 12 volts DC, Tx - 9 volt battery • Supplied with components and PCB • **Case optional: (use Rx - H 2853 Tx - H 2855)** • PCB Size: Rx - 43mm x 105mm Tx - 44mm x 71mm

K 2810

$49.95

Clifford - The Cricket

- Experience the feel of the great outdoors' without leaving your living room! • Turn off your lights and you'll see the crickets eyes (LEDs) glow and hear it emit a sound resembling the 'chirp' of a cricket • Stops chirping when lights turn on • Power source required: 9 volt battery • Supplied with all components, PCB and Piezo alarm • **Case optional (use H 2855)** • PCB size: 36mm x 41mm

K 3533

$14.95

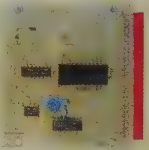
LED Chaser

- Ideal for store front displays or any other place you want to draw attention
- Has 10 LEDs flash in rotation around the outer edge of the board
- Adjustable speed
- Power source required: 6 volts DC
- Supplied with all components, PCB and LEDs • **Case optional (use H 2851)**
- PCB size: 83mm x 134mm

K 3166

$24.95

Knightrider Scanner

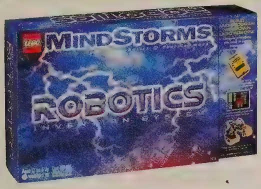


- With this kit you can now simulate the car KITT in the TV series Knightrider • PCB carries a row of 16 LEDs which are scanned back and forth continuously
- Features variable scan rate • Power source required: 9 to 12 volts DC • Supplied with components and PCB • **Case optional (use H 2852)** • PCB size: 85mm x 94mm

K 3168

$29.95

Lego Mindstorms

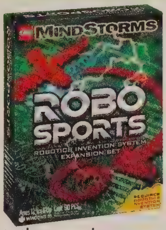


9719 Lego Mindstorms™ Robotics Invention System™

Robotic power at your command. Design, build and program your very own robotic invention. Create thousands of unique inventions. Works with your PC to let you build and program robots that move, act and think on their own. Discover the MindStorms™ internet community. From 12 years to adults.
Cat K 1480

$549 NEW FOR '99

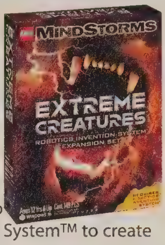
Robotics Invention System™ Expansion Kit – Robosports™



Build high performance robots. Add RoboSports™ to the Robotics Invention System™ to create robots that can throw, dunk, kick and score. Choose from 90 additional pieces to increase your robot's speed, flexibility and range of motion. Tackle 12 exciting CD-ROM challenges using hints and tips for the RoboSports™ Constructopedia™. This set includes an additional motor. From 12 years to adults.
Cat K 1481

$149 NEW FOR '99

Robotics Invention System™ Expansion Kit – Extreme Creatures™

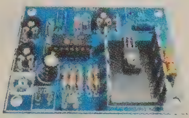


Build creates that act on instinct. Add Extreme Creatures™ to the Robotics Invention System™ to create creatures that can bite, sting, pinch and pounce. Use flashing fibre optics to alarm intruders or lure unsuspecting prey. Conquer 12 CD-ROM challenges using hints and tips from the Extreme Creatures™ Constructopedia™. From 12 years to adults.
Cat K 1482

$149 NEW FOR '99

Kits – Velleman

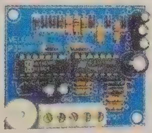
Kojak Siren



Create or imitate sirens of all kinds by adjusting three trimmers. Powerful sound with an additional 2W amplifier on the PCB. Power supply: 8-14 V DC.
Cat K 1300

$19.95

Head Light Indicator



This head-light indicator can be set either to indicate the head-lights should be switched off after switching off the ignition, or to indicate that the head-lights should be switched on once the engine is on. Only three wires needed to hook up. Supply voltage: 12V DC.
Cat K 1304

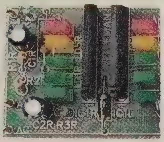
$24.95

Screen Wiper Robot

Up to three different time intervals (2-10-15 seconds) can be selected for the windscreen wipers of your car. Manual includes installation instructions for most cars. Relays on PCB. Requires 12-15 VDC.
Cat K 1305

$29.95

Liquid Level Controller

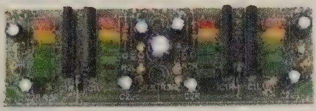


LED control of set fluid level: low, middle, high. Controller: the relay automatically switches a pump and/or valve to keep the fluid level between the low and high marks. Alarm: if the sensor detects a level which his too high or low the relay will operate a bell or the alarm device. Supply voltage: 12-14 VAC or 16-18 VDC, 100mA, relay output 240V, 3A max.
Cat K 1307

$29.95

Velleman Kits

Exclusive to Dick Smith Electronics, these Velleman Kits are produced and assembled in Belgium, and all come with a reusable plastic container, pre-screened and pre-drilled PCBs and all components stripped in order of assembly.

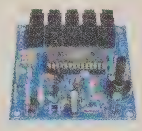


Dual Stereo VU Meter Model

If all inputs of the mixer panel are to be viewed or pre-adjusted, then this option is indispensable. This module contains 2 stereo VU meters with 2 x 5 LED indicators and can be used with the 6 or 12 channel mixing panel. (May also be used with other equipment, eg, to indicate the output level of an amplifier). Indication: -13, -8, -3, 0, +3 dB. Sensitivity: 0 dB - 0.775 VRMS (easily adjustable). Supply voltage: 14-18 VDC/62 mA. PCB dimensions: 28 x 98 mm.
Cat K 1302

$34.95

Sound Generator



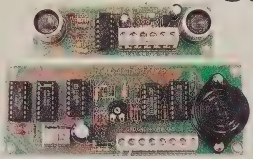
With one output for direct connection to a speaker and one output for connecting to a mixer panel or amplifier. Generate the following effects: machine gun, siren, phaser gun, racing car, screaming of car tires on a bend, explosion. Supply voltage 8-10 VDC/100mA, line output 1VRMS, speaker output 1W.
Cat K 1301

$39.95

Electronic Watchdog

A circuit that produces a natural sounding bark with a sensitive "ear" to everything that comes near it. Choice of two different "dogs". Power supply: 2x8 VAC or 9-12 VDC/500mA. Speaker output 2 W at 4 ohms.
Cat K 1306

$59.95



Parking Radar

If you have problems parking then this kit with ultrasonic sound waves is for you. It "measures" a distance between the car and other obstacles and a signal is generated when it crosses the pre-set distance. Supply voltage 10-15 VDC/16mA.
Cat K 1303

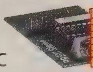
$69

Discover the World of Stamps

Kits – Stamps

Basic Stamps are small computers that run PBASIC programmes, and communicate with other electronic devices. Their simple language and easy interfacing make BASIC Stamps ideal for many applications, for the hobbyist and for education. The Stamp 1 & 2 are 14 and 24-pin modules, with the circuitry packed onto a small board. These modular BASIC Stamps have corresponding carrier boards for easy interfacing to PCs, power supply and prototyping. BASIC Stamps connect your computer's parallel or serial port for programming. After being programmed they can be connected directly to buttons, LEDs and other TTL-level devices, and with extra components, to non-TTL devices such as relays.

BASIC Stamp Rev.D



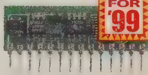
NEW FOR '99

Complete PC Board with prototype area. Runs PBASIC programs with 8 I/O lines. 356 bytes EEPROM (program and data). 50 instructions maximum program length. Parallel port PC interface. Insert into a carrier board (K 1402), connect with cable and program using an IBM PC running DOCS. 9V DC power required. 4MHz oscillator. Includes 9V DC battery clip.

Cat K 1400

$109

BASIC Stamp 1 Rev.E



NEW FOR '99

Runs BASIC programs with 8 I/O lines. 256 bytes EEPROM (program and data). 80 instructions maximum program length. Parallel PC interface. Insert into a carrier board (K 1402), connect with cable and program using an IBM PC running DOS. 9V DC power required. 4MHz oscillator.

Cat K 1401

$109

Stamped-Based Universal Timer

NEW FOR '99

Features timer circuit that utilises the features of the Stamp microcontroller. Features LEDs and piezo buzzer to indicate events. Multiple inputs for design flexibility. Includes relay, components and multi-purpose PCB. Power supply: 12V DC. Stamp Microcontroller not included.

Cat K 1408

$29.95

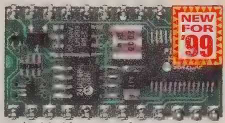
BASIC Stamp Development Kit

Includes manuals for Stamps 1 and 2, cables for Stamps 1 and 2 programming and software to get you started including Stamp 2 Windows software. Certificate for 3 months free technical support.

Cat K 1405

$199

BASIC Stamp 2



NEW FOR '99

Features 16 I/O lines. 2048 bytes EEPROM (program and data). 50 0instructions maximum program length. Insert into carrier board (K 1403), connect with a cable and program using any IBM PC running DOS. Serial PC interface. 9V DC power required. 20 MHz oscillator.

Cat K 1404

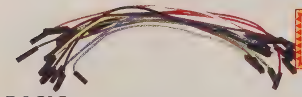
$149

NEW FOR '99

Parallel Port Interface for Stamp 1

Cat K 1407

$24.95



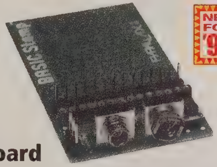
NEW FOR '99

BASIC Stamp Jumper Connectors

Pack of 10.

Cat K 1406

$12.95



NEW FOR '99

BASIC Stamp 1 Carrier Board

Cat K 1402

$44.95

BASIC Stamp 2 Carrier Board

NEW FOR '99

Cat K 1403

$59

CPLDs

Attention Electronic Hobbyists!

When designing digital circuits, have you ever wondered if there is a better way! Well, now there is! CPLD (Complex Programmable Lobic Devices) can be programmed and re-programmed to be used instead of a larger number of logic devices. They work to miniaturise your kits and with the right programming, can replace hundreds of discrete logic gates in a single chip. Each kit comes with CPLDs, interface boards and programming software. Thanks to Dick Smith Electronics, CPLD starter kits are available for hobbyists to test out. Purchase one today and try it for yourself.

Trigger Adapter MKII

NEW FOR '99

Utilises a complex programmable logic device (CPLD). The adaptor, when connected to a CRO, will trigger the scope when all relevant input conditions are met. With eight inputs (expandable up to 24 with slave units) and frequencies up to 20MHz. Trigger pulse delay from 1us to 1ms after preselected event. 1/3 the size of the original kit, with all logic programmed into the CPLD chip. Source code included on floppy disk.

Cat K 1460

$79.95

Cybug

Cybug

NEW FOR '99

Make a self-propelled robot that copies the behaviour of simple insects like a cockroach. Designed from simple analogue circuitry. Cybug can sense and move away from physical obstacles like walls and furniture, can be light seeking (phototropic) or light avoiding (photophobic). Easy mechanical construction and reliable operation, this bug can be made by anyone with an interest in electronics. Consists of 3 IC boards, low-power regulator and components.

Cat K 3560

$69.95

Universal Voltage Regulator

Power almost any battery operated device up to 1.5A from a car battery or DC supply. By changing a resistor you can step down the output voltage to anywhere between 1.2V and 37V DC (depending on input voltage). Features thermal overload and short circuit protection. Supplied with components and PCB. **Case optional (use H 2304).**

Cat K 3592

$\$12^{50}$

Universal Regulator Kit

A low cost, regulated DC power circuit suitable for powering external peripherals. POC, CD player from a car lighter socket etc. Uses jumper links to preset output voltage between 3-15V and offers output current up to 1.5 amps (using optional heatsink). Power source required up to 25V DC. Supplied with components and PBC. **Case optional (use H 2855).** PCB size: 19mm x 52mm.

Cat K 3594

$\$12^{50}$

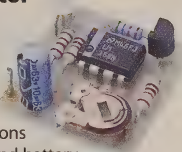
Mini 1.5V-9V DC Converter

Here's an easy way to replace those expensive 9V batteries with cost efficient 1.5V cells. Easy-to-build, uses just 3 components. Allows any type of 1.5V cell (AA, C, D, N or AAA) to replace a more expensive 9V battery. Supplied with components and PCB. **Case optional (use H 2855).** PCB size: 17mm x 43mm.

Cat K 3231

$\$14^{95}$

LED Battery Voltage Indicator



Can be used in most battery-operated equipment. With dual-coloured LED indication. Combines the functions of a power-on LED and battery voltage indicator. Voltage range: 6-30V. Power source required: 9-12V DC. Supplied with components and PCB. **Optional case (use H 2855).** PCB size: 25mm x 25mm.

Cat K 3118

$\$12^{50}$

Regulator for Battery Charger

Turns a "bare bones" 12 volt automotive battery charger into a fully regulated charger. Circuit can be left connected to a battery indefinitely. Designed to adapt an Arlec 4A charger or a similar unit. Power source required: 12V DC. Supplied with components, PCB and heatsink bracket. **Case optional (use Charger case).** PCB size: 65mm x 130mm.

Cat K 3127

$\$29^{95}$

Solar Generator

Cheap, no fuss way to trickle charge a 12V lead acid or gell cell battery using a solar panel. Ideal for any area where mains power is unavailable. Supplied in short form with PCB and components.

Cat K 3129

$\$12^{50}$

NiCad Battery Discharger

Has switchable voltage (3.6, 4.8, 6.0, 7.2, 8.4, 9.6, 10.8 and 12V). Automatic cut-off. Ideal for most types of NiCads used in camcorders, cellular phones and radio-controlled cars. Current discharge of 50mA or 200mA. Power source required: nil. Supplied with components, hardware, case and pre-punched, screened front panel.

Cat K 3126

$\$44^{95}$

7.2
8.4
6.0
9.6
4.8
10.8
3.6
12.0
NI-CAD BATTERY
DISCHARGER

Universal Charger

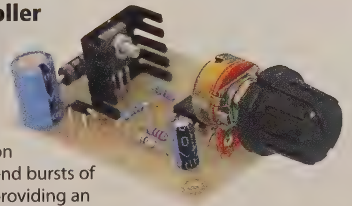
Immensely popular!

Designed to fast charge many types of batteries as found in power tools including NiCad and NiMH. Also charges 6V and 12V sealed acid packs and lead acid car and motorcycle batteries. Power source required: 240V AC. Supplied with all components, hardware, transformer, heatsink, PCB, plastic case, pre-punched, screened front panel and pre-punched rear panel.

Cat K 3216

$\$229$

DC Motor Controller

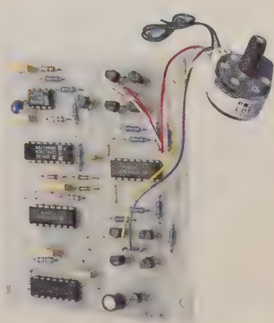


Circuit is designed to control 12V DC mini drill motors or lights with currents up to 1 amp. Employs the pulse-width modulation (PWM) technique to send bursts of current to the motor, providing an efficient means of varying motor speed. Power source required: 12V DC. Supplied with components. PCB and heatsink for switching transistor. **Optional case (use H 2853).** PCB size: 43mm x 61mm.

Cat K 3070

$\$17^{50}$

Stepper Motor Controller

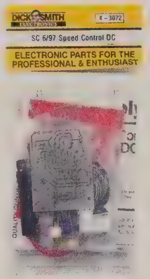


Suitable for small stepper motors. With forward and reverse direction. Can be used in a variety of applications such as controlling a model railroad boom gate. Designed to suit motors which just draw a few hundred milliamps at 12V. Power source required: 12-16V DC. **Optional case (use H 2851).** PCB size: 76mm x 97mm.

Cat K 3074

$\$24^{95}$

12/24V Speed Controller



Provides high current speed control for 12 and 24V DC systems. Maximum current 20 amps. Pulse-width modulated. Ideal for controlling 12V DC motors in cars (e.g. pumps for fuel injection, water/air intercoolers and water injection systems). Can also be used for headlight dimming in the daytime and for running 12 volt motors and pumps in 24 volt vehicles. Power source required: 12-24V DC. Supplied with components and PCB. **Case optional (use H 2853).** PCB size: 50mm x 68mm.
Cat K 3072 $29.95

Motor Speed Controller

K-3085
SPEED CONTROLLER
DICK SMITH ELECTRONICS

Designed to regulate the speed on heavy-duty power tools. Ideal for circular saws, electric drills, lawn edgers, jig-saws, sanders and other equipment. Rated at 5 amps. Suitable only for "brush" type motor. Triac controlled. Power source required: 240 volts AC. Supplied with a pre-punched black anodised and screened front panel, components, PCB, hardware including flush mount mains socket and case.
Cat K 3085 $59.95

10A Speed Controller

MOTOR SPEED CONTROLLER
SLOW
FAST

Use with routers, jigsaws, grinders, circular saws, electric whipper snipper, electric weed eaters, fans etc. Control available from fully stopped to maximum speed. Uses modern switch mode power supply techniques. Rating of up to 10A @ 240V. Excellent, very low operating speed. Constructed in safe, earthed diecast case. Interference suppression included. Power source required: 240V AC. Supplied with all components. PCB, pre-punched diecast case and screened front panel.
Cat K 3087 $129

Bring your model train set to life!

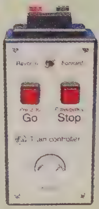
Model Rail Point Controller

Operate your model railway points remotely. Requires 12-15V AC/DC.
Cat K 3031 $9.95

Train Controller Kit

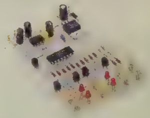
One control provides full reverse to full forward speed. Circuit provides inertia and a brake switch plus automatic overload protection. Power source: **240V AC (mains transformer required – M 2165 (9v-0-9v)).**
Cat K 3029 $34.95

Model Train Control



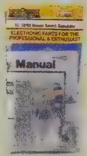
Regulates the speed of your model train and simulates inertia and momentum. Power source required: 6 to 18 volts AC. Supplied with components, hardware, PCB, front panel label and case.
Cat K 3027 $39.95

Kit Light Simulator



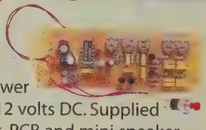
Simple project for a model railway which simulates traffic lights. Supplied with components, LEDs and PCB. Needs 15V DC.
Cat K 3023 $19.95

Diesel Sound Simulator



Easy-to-build and fits inside most locomotives (speakers included). Supplied with components, PCB and mini speaker. **Case optional.**
Cat K 3030 $19.95

Steam Whistle Kit



Creates 2-chord whistle sound. Power source required: 12 volts DC. Supplied with components, PCB and mini speaker. **Case optional (use H 2853).**
Cat K 3021 $19.95

Steam Train Whistle

Produces steam-generated whistle blown by steam trains. Power source required: 12 volts DC. Supplied with components, PCB and mini speaker. **Case optional (use H 2851).**
Cat K 3024 $24.95

Flexi Timer MKII

Select timing periods from seconds to days. With four separate outputs and two independent programmable timing events. Can be synchronised with the 50Hz mains or driven by an internal RC clock. DIP switches provided for programming delay times. Power source required: 5-15V DC. Supplied with components and PCB for assembly of basic version to suit DC source. **Case optional (use H 2851).** PCB size: 55mm x 125mm.
Cat K 3596 $39.95

Phone/ Modem Switch

When connected to a modem, this unit will activate its 240V AC outlet when a pre-determined number of rings occur on the phone line. Power source required: 240V AC. Supplied with components, hardware, PCB, case and pre-punched, screened front panel.
Cat K 3606 $49.95

UHF Remote Control

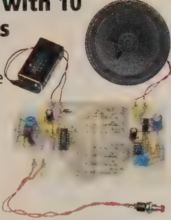
2 channel remote control. Can control two separate devices. Operating range: approx. 20m (with 30cm antenna). Allows for over 6000 security code options. Power source required: 10-15V DC. Supplied with components, hardware, PCB, receive module, case and a 2 channel keyring type transmitter (fully assembled).
Cat K 3260 $129

Also available:
Extra transmitter Cat K 3261 **$44.95**

Temp Controller

Used in control applications such as room temperature control or cooling devices such as fans. Automatically switches the power on or off when the temperature goes below or above a set threshold. Supplied with all components, hardware, digital temperature module, case and pre-punched, screened front and rear panels.
Cat K 3130 $129

Doorbell Chime with 10 Selectable Notes



An easy-to-build doorbell chime where you can program your own tune with 10 selectable notes. Install in your existing doorbell housing. Power source required: 12V DC. Supplied with components, PCB and mounting screws.
Cat K 3803

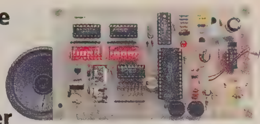
$22.50

Siren Generator Kit

Just a flick of a switch will sound police, ambulance or fire engine sirens. With just a slight alteration you can also get it to emit the sound of a machine-gun firing. Power source required: 1.5V battery (AA cell). Supplied with components, PCB, battery holder and speaker. **Case optional (use H 2853).** PCB size: 32mm x 78mm.
Cat K 5514

$14.95

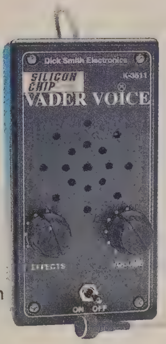
Versatile Solid State Audio Recorder



Great for reminder message to turn off your lights, put on your seatbelt etc! Record up to 8 short messages or sounds. Programme them to replay in response to different trigger input signals. Recorder IC allows you to re-record as many times as you like. Total of 16 seconds recording time. Features repeat selection and chime option. Power source required: 10V-20V DC. Supplied with components, PCB and hardware items such as speaker, relay, IC sockets and DIP switches. **Case optional (use H 2852).** PCB size: 84mm x 145mm.
Cat K 5019

$109

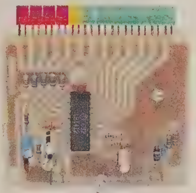
Vader Voice Kit



Here's one for Dr Who and Star Wars fans! Disguise your voice as either Darth Vader or a Dalek. Comes with all components, PCB, hardware, case, speakers and front panel label.
Cat K 3511

$34.95

12 LED VU Meter



Design offers fast response and peak hold display. Power source required: 11-40V DC. Supplied with PCB, red, yellow and green LEDs, plus all necessary components. **Case optional (use H 2851).** PCB size: 81mm x 85mm.
Cat K 5370

$29.95

Stereo Simulator

STEREO SIMULATOR

Converts 'old favourite' movies to stereo sound. Brilliant low-cost device turns almost any mono signal into synthetic stereo sound. Simple to construct and use. Supplied with components, hardware, case, front panel label and 9V DC power adaptor.
Cat K 3421

$49.95

Musical Kits

Wah-Wah Guitar Kit

Popular guitar effect is controlled by a foot pedal (not included). Resulting sound produces suddenly increasing/decreasing volume. Includes PCB stakes, PCB components and PCB mounted 6.35mm sockets.
Cat K 5620

$34.95

Stroboscopic Tuner

Tune your musical instruments. Beat frequency is displayed graphically on a ring of LEDs. Features visual or aural tuning. Power source required: 9V-12V DC. Supplied with components, PCB, case, hardware and pre-punched screened front panel.
Cat K 5102

$59.95

AEM 6510
PUG-NOSE

Guitar Practice Amp Module

Ideal for practising your favourite riffs at home. Output power: 4 watts into 4 ohms. Power source required: 12V DC (nominal). Supplied with components, PCB, hardware such as pots, knobs, heatsink and front panel label. Case optional: cabinet design details shown in the instructions. PCB size: 48mm x 62mm.
Cat K 3548

$39.95

MIDI BREAKOUT BOX

Midi Breakout Box

Interfaces a keyboard to your sound card and is a low cost alternative to 'off-the-shelf' interfaces. Power source required: 5V DC. Supplied with components, PCB, hardware, case and pre-punched, screened front panel.
Cat K 3604

$49.95

General Kits

STUD FINDER

Stud Finder

Ideal for handymen, home renovators etc. Glide stud finder over any fibro or gypsum board wall to locate studs and noggins. Power source required: 9V battery. Supplied with components, hardware, PCB case and front panel label.

Cat K 2723 💡 $\$34^{95}$

ELECTRIC FENCE CONTROLLER

Electric Fence Controller

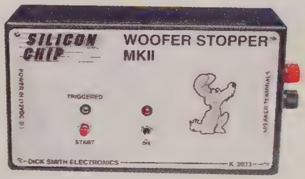
Suitable for activating fence runs of around 1km in length. Power source required: 12V DC. Supplied with components, case labels, PCB and hardware items such as banana sockets and battery terminal alligator clips. Other hardware items such as PVC tubing, end caps and 12V ignition coil are optional.

Cat K 3008 💡 $\$34^{95}$

Basic Metal Detector

This simple but educational kit demonstrates the principles involved in metal detection. Utilising an air-cored choke, it can be used to detect large metal objects at close range.

Cat K 3007 💡 $\$24^{95}$


SILICON CHIP
WOOFER STOPPER MKII
TRIGGERED
START
ON
POWER IN 12VDC
SPEAKER TERMINALS
DICK SMITH ELECTRONICS
K 3033

Woofer Stopper MKII

Hi-Power!

Now you can quieten that annoying neighbourhood dog. Emits a blast of high-intensity sound (inaudible to humans) to deter dogs. Can drive a maximum of 4 horn tweeters. Power source required: 12V battery (use S 7368) or 12V DC power adaptor (M 9670). Supplied with components, PCB, hardware, plastic case, front panel label and super horn tweeter (C 2205).

Cat K 3033 💡💡 $\$89^{95}$

Metal Detector

Highly-sensitive, suitable for use over wet or dry beach sand, with adjustable volume signal. Operates on 3V DC (2 x "C" cells). Supplied with components, limited hardware. Items (e.g. conduit, bends, clamps etc) are optional and can be purchased from your hardware store.

Cat K 3006 💡💡 $\$89$

Laser Pointer

Lightweight, compact and easy to construct. Output less than 1 mW. Adjustable focus. Power source required: 3V DC (use 2 "AAA" cells). Supplied with laser diode and module, hardware, batteries and a professional looking laser pointer case.

Cat K 1048 💡 $\$49^{95}$

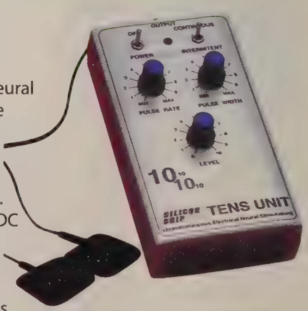
Health Product Kits

Tinnitus Relief Kit

A device that delivers a low-level background hiss (White noise), used to help mask the noises heard from people suffering from tinnitus. Masking signals can be varied from a 'gushing waterfall' to a 'soft wind'. MTP3055 MOSFET switches the unit on or off when earphones are plugged in or removed. Far less expensive than ready-built, commercially available units. Small enough to slip into a pocket. Power source required: 1 x 9V battery. Supplied with components, hardware, PCB, deluxe case and pre-punched front panel with label. Headphones included.

Cat K 3703 💡 $\$39^{95}$

T.E.N.S. Massager


OUTPUT
OFF
CONTINUOUS
POWER
INTERMITTENT
PULSE RATE
PULSE WIDTH
LEVEL
SILICON CHIP
TENS UNIT
Transcutaneous Electrical Neural Stimulation

Now you can alleviate pain electronically with this Trancutaneous Electrical Neural Stimulation (T.E.N.S.) device which passes pulses of electrical current through the skin via electrodes to stimulate the nerves below. Power source required: 6V DC (4 x "AA" cells). Supplied with components, hardware, PCB, case and front panel label (electrodes are optional and can be obtained from most chemists).

Cat K 3702 💡💡💡 $\$89^{95}$

Power Supplies

Universal Power Supply

Assembly Manual
K-3435
UNIVERSAL POWER SUPPLY

Can be used in a variety of ways as either a dual or single supply. Designed so that constructors can obtain many different voltages: +15V, -15V, +/- 15V, +18V to 22V or less than 15V. Power source required: power adaptor or transformer (depending on individual requirements). Supplied with PCB and instructions. Case optional (use H 3435). PCB size: 53mm x 71mm.

Cat K 3435

$9.95

DUAL OUTPUT 15W BENCH SUPPLY

'4-in-1' Mini Bench Supply

Easy-to-build DC power supply with exact voltages. 4 main DC supply voltages: +5V, -5V, +12V and -12V. Thermal shut-down in case of short circuit or overload with an output status LED on each output. Supplied with all components, hardware and transformer. Needs 240VAC.

Cat K 3213

$74.95

Variable Power Supply

Uses a power adaptor, so no mains wiring is required. Variable output: 1.5 to 15 volts. Maximum current: 500mA. Overload protected. Power source required: 240 volts AC. Supplied with components, hardware, case, pre-punched, screened front panel and 16 volt AC power adaptor.

Cat K 3200

$69

Benchtop Power Supply

BENCHTOP POWER SUPPLY

Practical and versatile design. Variable output: 2.5-18 volts. Output current: 1 amp @ 18 volts (550mA continuous). Features switchable current limiting (30mA and 1.2A). With switchable voltage and current metering. Power source required: 240V AC. Supplied with components, hardware, PCB, panel meter, case and pre-punched, pre-screened front panel.

Cat K 3202

$119

Lab Power Supply

Dual rail benchtop supply. Variable output: 0-40 volts (20V-0-20V). Output current: up to 3.5 amps. Current limit: approx. 30mA to 3.5A adjustable (in 2 ranges). Features both voltage and current meters. Offers full electrical and thermal overload protection. With output load switching, current setting switch and drop out indicator. Power source required: 240V AC. Supplied with components, hardware, PCB, panel meters, case and pre-punched, pre-screened front panel.

Cat K 3206

$199

Oscillators

Mini Oscillator Kit

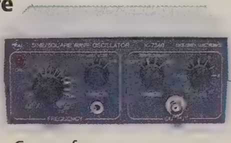
MINI OSCILLATOR
Square
Sine
Dick Smith Electronics K-7339

Small enough to fit in your pocket. Produces low distortion sine or square waves. Covers frequency range from around 41Hz to 18kHz. Output: 1.27V RMS sine (+4dBm). Distortion: 0.16% THD @ 1kHz. Power source required: 9V battery. Supplied with components, PCB, hardware, case and pre-punched, screened front panel.

Cat K 7339

$39.95

Sine/Square Wave Oscillator



High-performance benchtop audio oscillator. Covers frequency range from around 6Hz to 70kHz in 4 ranges. Distortion: 0.1% (20Hz to 50kHz). Output: 2V RMS sine. Supplied with components, hardware, PCB, case and pre-punched, screened front panel.

Cat K 7340

$89.95

Soundcard Pre-Amp

NEW FOR '99

Converts your soundcard into an oscilloscope or waveform generator. Take full advantage of your soundcard's input capabilities for making measurements. Includes software to get you started. With all components, hardware, PCB, case, pre-punched and screened front panel.

Cat K 7347

$49.95

Interfaces

Pocket Sampler

2V
SAMPLE
20V
CALIBRATE
Pocket Sampler
Dick Smith Electronics K-7345

Provides an interface between your computer and the outside world. Connects your computer via the parallel port. 8 bit resolution. Sampling time scale, ranging from once every hour, down to one sample every 100us (10kHz). Power source required: 8-16V DC. Supplied with components, case, hardware, front panel label and software on a 3.5" disk.

Cat K 7345

$39.95

EPROM Programmer

Flexible and powerful programmer. Controlled via the parallel port on an IBM compatible PC. Can handle EPROMs from 2716 (2K x 8) to 27256 (32K x 8) and it will also program 2816 and 2864 electrically-erasable (EE) PROMS. Power source required: 12V AC. Supplied with components, hardware including two quality EPROM test sockets, case and pre-punched, screened front panel and display PCB.

Cat K 3602

$129

Crystal Tester

An easy, quick way to check crystals before installing them in projects. Gives you a simple 'good' or 'bad' indication via an LED. **Power source required: 9V battery.** Supplied with components. PCB and hardware items such as battery snap and alligator clips. **Case optional (use H 2855).** PCB size: 39mm x 51mm.
Cat K 7228

$9.95

Capacitance Meter Adaptor

Turns your digital or analogue multimeter into a direct-reading capacitance meter. Plugs directly into your meter. Capacitance range from 3.3pF to 2000uF in 2 ranges. **Power source required: 9V battery.** Supplied with components, PCB and hardware such as banana plugs, switch and battery snap. **Case optional (use H 2853).** PCB size: 25mm x 66mm.
Cat K 3410

$24.95

In-Circuit Transistor Tester

TRANSISTOR TESTER

Handy for indicating whether or not transistors are working properly. Check for NPN and PNP types. **Power source required: 9V battery.** Tests both small signal and power transistors. Indication given by 2 LEDs. Can be used to test transistors that are already in circuit. Supplied with all components, PCB, hardware (including test clips), case and pre-punched, screened front panel.
Cat K 7218

$26.95

Signal Tracer

Great project for the beginner. Ideal for tracing audio signals, amplitude modulated (AM) or radio frequency (RF) signals in circuits. Simple and useful piece of test equipment when attempting to repair amplifiers or radios. With switchable gain. **Power source required: 9V battery.** Supplied with components, hardware, PCB, case and front panel.
Cat K 7332

Limited Stocks Available

$29.95

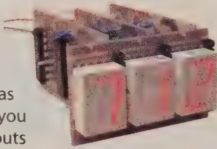
Thermocouple Adaptor

Can be used with any digital multimeter. Temperature range governed by characteristics. Range of probe supplied: -40°C to 250°C. Connects to your digital multimeter via flying leads and banana sockets. **Operates on 1 x AA and 1 x 9V battery.** Comes with case, front panel label, battery clips, PCB and all components.
Cat K 7120

$44.95

NEW FOR '99
TYPE K THERMOCOUPLE INTERFACE

Counter Module



3-digit display. Expandable to as many digits as you like. Control inputs include lamp test, blanking, output latching, up/down count, input gating, reset and clock. Supplied with components, PCB and displays.
Cat K 3452

$39.95

Digital Voltmeter

DIGITAL CAR VOLTMETER

Measures battery voltage between 8-17 volts with a three-digit LED display. Supplied with components, hardware, PCB, case, front panel label and digital displays. A satellite PCB is supplied to mount the displays remotely. **Requires a 12V battery.**
Cat K 4208

$49.95

Microwave Leakage Detector

MICROWAVE OVEN LEAKAGE DETECTOR
TEST
HALF-SCALE: BEWARE
FULL-SCALE: RUN!

Simple and easy to use. Check for harmful microwave leakage simply by pressing a button. No batteries or power source required. Supplied with components and hardware including signal meter, case and front panel label.
Cat K 3095

Limited Stocks Available

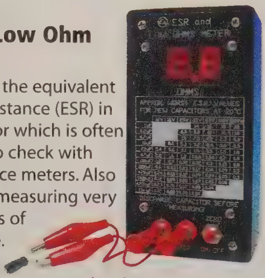
$24.95

Shorted Turns Tester

Tester for line output or 'flyback' transformers and HF wound components. Aids in the servicing of TV receiver, video monitors and computer power supplies. Identifies horizontal output stage faults. Includes all components, PCB, case, pre-punched and screened front panel. **Power source required: 4 x AA batteries.**
Cat K 7205

$44.95

ESR & Low Ohm Meter



Measures the equivalent series resistance (ESR) in a capacitor which is often difficult to check with capacitance meters. Also great for measuring very low values of resistance. Supplied with all components, hardware, PCB, case, display window and pre-punched, screened front panel. **Power source required: 9V battery.**
Cat K 7204

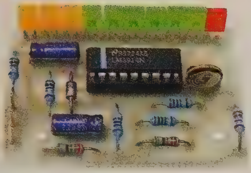
$74.95

NEW FOR '99
SHIELDED RESISTANCE BOX
x 1kΩ
x 10kΩ
x 100kΩ

Shielded Resistance Box

Covers 3 decades, from 1kOhm to 777kOhm. Shielded to prevent hum and RF interference. Utilises BNC sockets at each end. Can be built in hours, no PCB required. Includes all components and front panel label.
Cat K 7125

$24.95



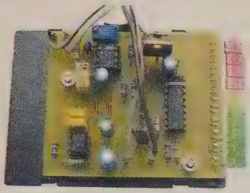
Car Battery Monitor

Simply and functional kit to monitor your car battery. The state of charge is shown by an LED bar graph. Levels range from undercharged to optimum charge levels to overcharged. Supplied in short form with PCB and components.

Cat K 4611

$14.95

NEW FOR '99



12V Car Ammeter

Keep an eye on the charging and discharge of your car's battery with this LED ammeter. It has 10 rectangular LEDs and will indicate charge and discharge currents up to 25 amps. No alterations need to be made to your car's wiring as it monitors the voltage drop across the negative strap to the battery.

Cat K 4612

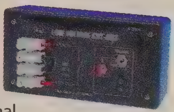
$22.50

LED Voltmeter

3 LEDs show if battery voltage is low, correct or high. Supplied with a small PCB, status LEDs and components. Requires 12V battery. PCB size: 25mm x 39mm.

Cat K 4205

$12.95



Low Voltage Cut-Out

Ideal for a car or boat when powering external accessories. Disconnects the load from the battery once the voltage drops to a predetermined level. Adjustable drop-out voltage: 10.9 to 11.9 volts (nominal). Can be set to automatically restore power to the load when the battery returns to normal condition. Power source required: 12V DC. Supplied with components, hardware, PCB, case and front panel label.

Cat K 3124

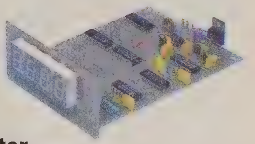
$32.50

Low Fuel Indicator

Lights a 12V warning lamp when the fuel drops below a pre-determined level. Supplied with PCB, zippy box, 12V bezel and all necessary components. Requires a 12V battery.

Cat K 4210

$17.95



Digital Tachometer

4 digit display works with ignition systems on 4, 6 and 8 cylinder motors. Supplied with components, PCBs and LED display. Needs 12V battery. PCB size (main): 82mm x 108mm.

Cat K 3241

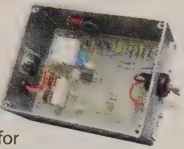
$44.95

Neon Tube Modulator

Wire the sound system of your car to the neon light system. Modulates 12V neon tubes which connect to the subwoofer so they oscillate with the bass beat. Supplied with components and PCB. Requires a 12V battery. PCB size: 28mm x 60mm.

Cat K 3164

$9.95



High Energy Ignition Kit

Reduces the need for tune-ups in cars with points. Provides connection terminals for programmable ignition. Includes components, hardware, PCB and diecast box. Power source: 12V DC.

Cat K 3303

NEW FOR '99

$69.95

Motorcycle Intercom

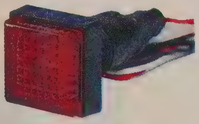
2-way communication. Full duplex operation. Single volume control for both channels. **Uses 4 x AA batteries** or power directly from motorcycle. Includes all components, hardware, PCB, deluxe case and pre-punched screened front panel. Accessories not included.

Cat K 6021

NEW FOR '99

$44.95

Car Security

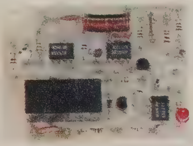


Flashlight Deterrent Light

Red flashing light. Activating by the ignition and automatically turns off with ignition. Supplied with components, mounting hardware, deluxe bezel case and 12 volt globe. Needs a 12 volt battery.

Cat K 4200

$12.95

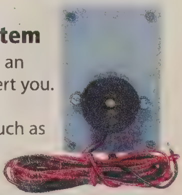


Budget Car Alarm

Simple to construct and install. Features a warning LED. Supplied with components and PCB. Requires 12V battery. PCB size: 55mm x 74mm.

Cat K 3250

$29.95



Audible Car Monitoring System

When trouble occurs an audible alarm will alert you. Can be connected to warning indicators such as oil, temperature, brake, engine management (EMU), alternator etc. Includes all components, PCB, case, Piezo beeper and hookup wire.

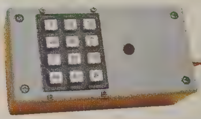
Cat K 4216

$22.95

Car Security

NEW FOR '99

NEW FOR '99



NEW FOR '99

Screecher Car Alarm Kit

Utilises a high-output, piezo siren to blast an intruder inside your car. Compact, easy-to-install and extremely effective. Features entry/exit delays and flashing warning LED. Circuit includes transition sensitive triggers. Power supply: 12VC DC. Includes all components, piezo siren, case and PCB.
Cat K 4301

$39.95

Engine Immobiliser MKII

Circuit stalls engine when activated. Connects directly to ignition system. Kit can be assembled and used independently. Can also be interfaced with control module (keypad). Power supply: 12V DC. Includes all components, case and PCB.
Cat K 4303

$34.95

Immobiliser MKII Keypad

Interfaces with the MKII immobiliser kit. Choose your own 4-digit code for arming/disarming. No hidden switches required or keys to carry. Can be hidden or mounted for visible deterrence. Power supply: 12V DC. Supplied with hardware, keypad module, PCB and all components.
Cat K 4304

$29.95

Alarms

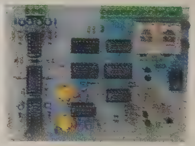
Combination Lock

Can be used to operate your K 8401 alarm control unit or many other burglar alarms. Also works with solenoid door looks. Can be set to trigger the alarm if it detects repeatedly incorrect entries. Power source required: 12V DC. Supplied with components, PCB and high-quality keypad. Case optional (use H 2853 plus K 8404 front panel pack). PCB size: 51mm x 115mm.
Cat K 8403

Also available:
Front Panel Cat K 8404 **$14.95**

$49.95

2-Sector Alarm Control Unit

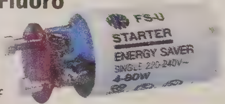


Designed to be easily customised with additions such as sector modules (K 8400), power supply (K 8402) and keypad lock (K 8403). Features variable entry/exit delays, LED status indicators, alarm driver circuitry, timed and latched outputs and 2-sector inputs. Power source required: 12V DC. Supplied with components, PCB, hardware items such as IC sockets, relays and terminals. Case optional (use H 2744). PCB size: 116mm x 140mm.
Cat K 8401

$54.95

Lighting Kits

Electronic Fluoro Starter



For rapid turn on and blink-free running of your fluoro lamps. Suit 18W, 36W and older style 20 and 40 watt tubes. Power source required: 240V AC. Supplied with all specified components, PCB and starter case.
Cat K 3012

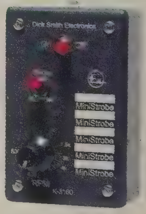
$27.50

12V Flasher Unit

Great for signs or parties! Uses 1 x 555 timer and 1 Mosfet. Strobe (1 lamp) or flasher (2 lamp) operation. Drives 20W or 50W Halogen lights. Power source required: 12V AC or DC. Supplied with all components, PCB and semiconductors. Lamps optional.
Cat K 3169

$24.95

Mini Strobe Kit



Can be used as an rpm indicator for electrical motors etc. Range adjustable from 400 to 4000 rpm. Power source required: 9V battery. Supplied with components, hardware, PCB case and front panel label.
Cat K 3160

$29.95

Disco Strobe

Provides a high-energy flash or white light. Variable flash rate from 1-10 flashes per second. More than one unit can be linked to flash in synchronisation. Power source required: 240V AC. Supplied with components, hardware, PCB, deluxe plastic case, screened perspex front panel, linear 100mm Xenon tube and a commercial high-efficiency reflector.
Cat K 3155

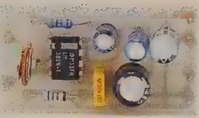
$169

Disco Light

Drives four lighting channels (maximum load 2400 watts). Can be controlled from your stereo or its own built-in microphone. Forward, reverse, auto-reversing chaser patterns and adjustable strobe rates. Simultaneous strobe on all channels and alternate light mode. Power source required: 240V AC. Supplied with PCB, all components, case, hardware and pre-punched, screened front panel.
Cat K 3150

$199

A Big Noise From A Tiny Amp! 0.5W Amp Module

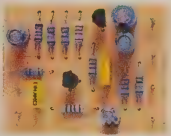


This tiny amp is about the size of a 9V battery. Produces 0.5W into 8ohms. Perfect for any of those projects that need an efficient, inexpensive amp that takes up minimal space. Power source required: 9V battery. **Case optional (use H 2855).** PCB size: 25mm x 46mm.

Cat K 5604

$7.95

Champ Pre-Amp



Designed to work with most small amplifier modules including our mini amplifier (K 5604). Simple to construct using two common transistors (BC548/BC558). Up to 40dB gain. Provision available on PCB for an (optional) electret mic insert. Power source required: 9V battery. Supplied with components and PCB. **Case optional (use H 2855).** PCB size: 36mm x 46mm.

Cat K 5608

$12.50

Universal Pre-Amp

This low noise stereo pre-amplifier is easy to build and ideal for use with magnetic cartridges, cassette decks or microphone inputs. Uses a single dual op-amp IC (LM-833). Power source required: 15-0-15V DC. Supplied with components and PCB. **Case optional (use H 2851).** PCB size: 78mm x 80mm.

Cat K 5402

$19.95

20W Module

Similar to amps found in TVs, tape recorders, organs, synthesisers etc. Uses discrete transistors for greater reliability. Ideal for the novice looking for an understanding of how an audio amp works. Power output: 6.6 watts, 12 watts or 19 watts (into 4 ohms) depending on supply voltage. Input impedance: 100K approx. Power source required: DC 20V (6.6 watts), 30V (12 watts), 35V (19 watts). Supplied with PCB and components. **Case optional (use H2851).** PCB size: 77mm x 127mm.

Cat K 3445

$28.95

50W Amplifier Module

Single chip power module using the LM3876 power amplifier IC. Extremely low distortion. Output power: 50W continuous into 8ohms. IHF power output: 60W @ 1kHz. Signal-to-noise ratio: 114dB (A weight) – 106dB (20-20kHz). Distortion 0.002% @ 40W 1kHz. Power source required: +/-37.5V DC. Supplied with components, PCB and hardware such as fuse and heatsink. **Case optional (use H 2481).** PCB size: 59mm x 84mm.

Cat K 5606

$44.95

50 W Stereo Amp Module

Uses two LM3886 monolithic power ICs for stereo output. Power output: 50 watts per channel into 8 ohm loads. With reduced supply rail: 60W/Ch into 4 ohm loads. Input sensitivity: 870mV RMS. **Power source required: 25V-0-25V AC (use M 1605 transformer).** Supplied with components, PCB and heatsinks. **Case optional (use H 2481).** PCB size: 60mm x 248mm.

Cat K 5612

$99

50W Amp Module

Perfect for band use as a PA, or build a pair for your own stereo. Power output: 50W into 8 ohms. Frequency response: 5Hz to 50kHz (+0, -3dB). Noise: 100dB. Sensitivity: 0.5V. **Power source required: +/- 40V DC (use K 3438).** Supplied with components, PCB, fuses and transistor mounting bracket. **Case optional (use H 2481).** PCB size: 77mm x 140mm.

Cat K 3440

$34.95

100W Amp Module

You can use two of these for stereo, giving a massive 200W output. Power output: 100W into 4 ohms. Response: 5Hz to 50kHz (+0, -3dB). Noise: 100dB. Sensitivity: 1V. **Power source required: +/- 40V (use K 3438).** Supplied with components, PCB, fuses and transistor mounting bracket. **Case optional (use H 2481).** PCB size: 77mm x 140mm.

Cat K 3442

$49.95

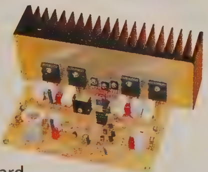
Power Supply Modules

Suits 50W and 100W amp. This power supply will run either 2 50W modules (K 3440) or one 100W module (K 3442). Circuit includes speaker de-thump circuitry. Output voltage: +/- 40 volts (40-0-40V). +/-15 volt supply rail also available which can be used to power a pre-amp. **Power source required: 28-0-28V AC @ 2A (use M 0144 transformer).** Supplied with components, PCB and relay for de-thump circuitry. **Case optional (use H 2481).** PCB size: 76mm x 159mm.

Cat K 3438

$39.95

125W Amp Module

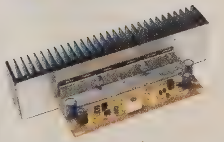


High power output with low noise and distortion. Based on the Motorola MJL21193/94 200W plastic power transistor. Features single-point star earthing, on-board supply rail fuses, output RLC filter network for unconditional stability and straight forward procedure for setting the quiescent current. Power output: 125W into 8 ohms and 175W into 4 ohms. Total harmonic distortion: less than 0.01%. Supplied with components, on-board hardware, PCB and output devices. **Heatsink optional (use H 3406). Case optional (use H 2481).** PCB size: 100mm x 167mm.

Cat K 5616

$109

300W Mosfet Amp Module



Easy to build, single board construction. Offers excellent noise and distortion performance. Module as used in sub-woofer amp (K 5580). Output power: 320W into 4 ohms 200W into 8 ohms. IHF power output: 430W into 4 ohms (short term), 240W into 8 ohms. Harmonic distortion: 0.005% at 300W into 4 ohms. Signal to noise ratio: >95dB at 100W RMS (unweighted). Frequency response: 10Hz to 100Hz, -3dB. Input sensitivity: 0.6V @ 47K for 200W RMS into 8 ohms. **Power source required: 50-0-50V AC (use M 1620 transformer).** Supplied with components including Mosfet transistors, PCB and heatsink bracket. **Heatsink optional (use H 3408). Case optional (use H 2481).** PCB size: 79mm x 202mm.

Cat K 5618

$135

Audio Kits

Mixer Pre-Amp

4-channel mixer pre-amp. Has separate bass, treble, mid-range input and output level control. Frequency response: 18Hz-35kHz (+/-3dB). Power source required: +/- 15 volts DC. Supplied with PCB, components and hardware. Case optional (use H 2481).
Cat K 5400

$54 95

Active Crossover

Allows you to integrate a subwoofer with an existing speaker system. Offers both low-pass and high-pass outputs which have matching roll-off and phase characteristics. Input and output impedances: 47k and 100 ohms respectively. Power source required: 12 volts AC (use M 2851 transformer). Supplied with components, PCB and hardware such as pots, knobs and sockets. Case optional (use H 2508).
PCB size: 50mm x 140mm.
Cat K 5404

$44 95

AEM 6510
PUG - NOSE
GUITAR PRACTICE AMP
VOL
TOP CUT
DIST

Mini Stereo Amplifier

This inexpensive circuit can give you the flexibility of a home hi-fi on your desk. Uses your personal stereo as the 'brains' of the operation. Utilises a tiny 8-pin DIL device which contains 2 amplifiers. Output power: 1 watt into 8 ohms (@ 9 volts). Power source required: 1.8-12V DC. Supplied with components, PCB, hardware, front panel label and case.
Cat K 5008

$34 95

15W Stereo Amplifier

15 WATT STEREO AMPLIFIER
K-5610
Dick Smith Electronics

A versatile and compact amp which can be used in various applications. Output power: 15W per channel into 4 ohms. Features bass, treble, balance and volume controls. 3-way input selector switch (CD, tuner and TV). Frequency response: 10Hz to 100kHz – 3dB. Harmonic distortion: 0.05% @ 14W RMS into 8 ohms. Power source required: 240V AC. Supplied with components, hardware, PCB, deluxe case and pre-punched, screened front panel.
Cat K 5610

$139

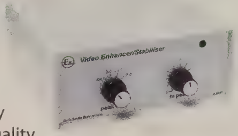
50W Stereo Amplifier

Compatible as a basic amplifier. It's ideal for your home stereo. A coupler socket and switch setup is included in the design which provides a direct stereo patch point between the output of the pre-amp and the input of the power amplifier. Allows other equipment such as power amp or subwoofer amp to be connected in parallel. Output power: 54W RMS (single channel) 46W RMS (both channels). Input sensitivity: 1V. Frequency response: 20Hz to 30kHz +0/=0.5dB. Harmonic distortion: <0.04% (20Hz to 20kHz). Power source required: 240V AC. Supplied with components, hardware, PCB, pre-punched case (powder coated matt black) and a pre-punched, screened front panel.
Cat K 5590

$299

Video Kits

Video Enhancer and Stabiliser



Improves image quality from poor quality video tapes. Reduces image degradation when making copies of your own family recordings. Includes circuitry which offers more stable viewing of video signals by stripping out 'piggyback' information. Enhancement circuitry allows fully adjustable boosting between zero and approx 8dB at any of the three selectable frequencies. Power source required: 240V AC. Supplied with all specified components, PCB, plastic instrument case and pre-punched, screened front panel.
Cat K 5411

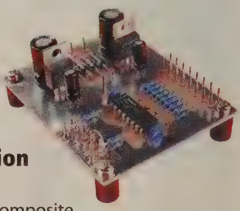
$89 95

Video Fader and Wiper

Good for home videos, allows professional post-production. Fade out one image and into the next or wipe-out from one image to another, either horizontally or vertically. Built-in enhancement facility to compensate for picture degradation caused by video dubbing. Power source required: 12V DC. Supplied with all components, hardware, sloping case, PCB, power adaptor and pre-punched screened front panel.
Cat K 5415

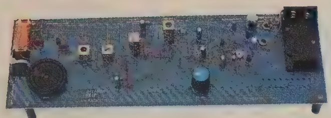
$89

Video and Pulse Distribution Amp



Distributes composite video, video signals or frequency reference signals to a number of locations. No loss of signal or image when connecting up to four monitors from a single source. Very wide band-width useful for driving multiple computer monitors from a single video graphics adaptor. Great for labs, schools and colleges. Supplied with components and PCB.
Cat K 5413

$49 95



AM Radio Trainer

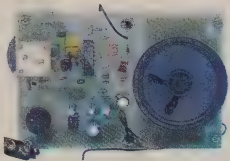
Teach yourself the basic principles of how a superheterodyne radio works. Uses commonly-used parts and everything is mounted on a single PCB. Power source required: 9V battery. Supplied with components, PCB and hardware (including battery holder). PCB size: 91mm x 277mm.
Cat K 5016 **$39.95**

FM Wireless Microphone

Small enough to fit inside a match box. Incredibly stable and sensitive circuitry. Use it to monitor your baby, a distant telephone, or as a one way intercom. Signals are transmitted at around 90MHz. For a receiver, simply use your FM radio. Power source required: 3 to 9 volts DC. Supplied with PCB, components and batteries (2 x 'N' cells – S 7241). Case optional (use H 2855). PCB size: 31mm x 50mm.
Cat K 5006 **$24.95**

Mini Vox

Build your own tiny voice-activated relay! Great where hands-free operation is required. Power source required: 12V DC. Supplied with components and PCB. Case optional (use H 2855). PCB size: 43mm x 46mm.
Cat K 3038 **$19.95**



FM Radio

Great hands-on way to learn about Radio Frequency (RF) circuits and Audio Frequency (AF) amplifiers. Power source required: 9V battery. Supplied with components, PCB and speaker. Case optional (use H 2852). PCB size: 86mm x 128mm.
Cat K 5014 **$39.95**

LEFT RIGHT
LEVEL LEFT
LEVEL RIGHT
STEREO FM TRANSMITTER
ON
OFF

FM Stereo Transmitter

Now you can connect this transmitter to your hi-fi and listen to your favourite music using your personal stereo cassette or FM headset radio. Quiescent current: 3mA. Harmonic distortion: 3% @ 200mV input. Stereo separation: 45dB @ 107.9MHz. Frequency range: 88.1 to 107.9MHz. Power source required: 1.5 volt battery (use 'AA' cell). Supplied with components, hardware, case and front panel label.
Cat K 5004 **$49.95**

NEW FOR '99

VHF-UHF Masthead Amplifier

Use this updated wideband amplifier to boost signal strength. Provides stable amplification of at least 9dB to 2GHz. Great for improving TV and other signal reception in the VHF and UHF bands. Power source required: 9V DC. Supplied with all components, hardware, PCB, casing, pre-punched front panel and power adaptor.
Cat K 5801 **$59.95**

ACTIVE INDOOR ANTENNA
TUNING
BAND
RF GAIN

Active Antenna

Provides improved reception up to 30MHz. Can be used with either a telescopic rod, a few metres of wire draped from a picture rail or dangling from an indoor dipole. Improves the performance of elderly shortwave receivers in sensitivity and selectivity. With tuneable selectivity and a healthy, smoothly-adjustable gain from 500kHz (below the bottom of the AM broadcast band) up to 30MHz (the top of the HF shortwave band). Power source required: 12 volts DC. Supplied with components, hardware, PCB, case, pre-punched, screened front panel, pre-punched rear panel and telescopic antenna.
Cat K 6102 **$59.95**

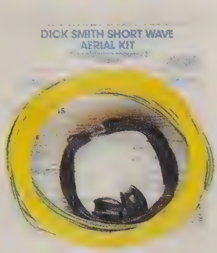
3 Band Amateur Receiver

Listen to your most popular HF amateur bands. Receives SSB, CW, RTTY and SSTV signals. Tunes three 500kHz wide sections of the HF spectrum which include the 80, 40 and 20 metre amateur bands. Frequency band: 80 mtrs (3.5MHz – 4.0MHz) 40 mtrs (7.0Mhz – 7.5MHz) 20 mtrs (14.0MHz – 14.5MHz). Power source required: 12 volts DC. Supplied with components, hardware, PCB, pre-punched screened front panel and case.
Cat K 6007 **$99**

Speech Processor
Input
Output
Compress
Over

Speech Processor for Transceivers

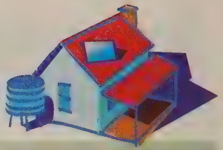
Now you can control the dynamic range of speech through your transceiver. Simply connects in-line with your existing microphone. Also acts as a pre-amp, compressor and speech filter, so your speech level at the other end is as clear as possible. Generates a "beep" each time the PTT button is released to signal the end of your "over". Power source require: 12 volts DC. Supplied with components, hardware, PCB, die-cast box and front panel label.
Cat K 6002 **$49.95**



Shortwave Antenna Kit

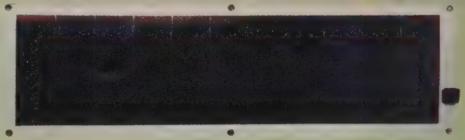
Get the very best from your equipment with this high quality shortwave antenna. Does not require soldering. Instructions are included. Supplied with approximately 25m of insulated copper, length of weatherproof rope and 'egg' insulators.
Cat K 3490 **$39.95**

A Powerful Alternative For Your Home, Boat Or Caravan!



Solar power - the most economical and energy-conserving source of power for your home, boat or caravan – is fast becoming the ideal alternative to electricity. Already, playing a major role in telecommunications, navigational aid, medical refrigeration, rural electrification and railway signalling. With our extensive range of solar modules, you too can take advantage of the economic and environmental benefits of solar power by using it domestically.

Canon Flexible Solar Panels By Unisolar



Can be flexed to suit your individual application. Maintains a full charge on a standard 12-volt battery. Perfect for boat owners, 4WD owners and other users of battery power who need their batteries ready for action when they are.

Canon

3 YEAR WARRANTY

5 Watts

- Voltage @ Peak Power: 16.5V
- Current @ Peak Power: 0.30A
- Weight: 540g
- Size: 554 x 247mm

O 3211 **$195**

11 Watts

- Voltage @ Peak Power: 16.5V
- Current @ Peak Power: 0.62A
- Weight: 910g
- Size: 424 x 554mm

O 3212 **$329**

32 Watts

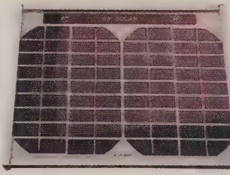
- Voltage @ Peak Power: 16.5V
- Current @ Peak Power: 1.94A
- Weight: 2.14kg
- Size: 1430 x 424mm

O 3213 **$699**

BP SOLAR

All BP Solar modules are of the utmost quality. Covered in a self-cleaning, toughened glass for high transmission, they employ the very latest large monocrystalline wafers, making them the most powerful, efficient solar modules available today! While all 36-cell panels and any 32-cell panel rated at over 40 watts require a regulator, smaller panels can be connected directly to a battery, making them more affordable than ever before! Water, hail and shock resistant, BP Solar panels are great for mounting almost anywhere.

12 Volt 4.9 Watt 36 Cells



Sturdy anodised aluminium frame with flying leads for connection.
Peak Power Watts: 4.9W.
Current at Peak Power: 0.33A.
Voltage at Peak Power: 15.2V.
Size: 238 x 258 x 38.5mm (WxLxD).
Weight: 1kg
O 3005

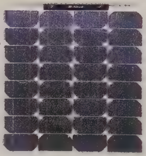
10 Year Limited Output Guarantee **$159**

12 Volt 16 Watt 32 Cells

Self regulating panel with sturdy anodised aluminium frame and flying leads for connection
Peak Power Watts: 16W.
Current at Peak Power: 1.05A.
Voltage at Peak Power: 15.2V.
Size: 430 x 490 x 38.5mm (WxLxD).
Weight: 4kg
O 3016

10 Year Limited Output Guarantee **$369**

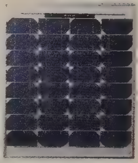
12 Volt 22 Watt 32 Cells



Self regulating panel with sturdy anodised aluminium frame and flying leads for connection.
Peak Power Watts: 22W.
Current at Peak Power: 1.45A.
Voltage at Peak Power: 15.2V.
Size: 448 x 478 x 38.5mm (WxLxD).
Weight: 2.8kg
O 3022

10 Year Limited Output Guarantee **$399**

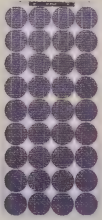
12 Volt 32 Watt 32 Cells



Self regulating panel with sturdy anodised aluminium frame and flying leads for connection.
Peak Power: 32W
Peak Power Current: 2.13A
Peak Power Voltage: 15.2V
Szie (WxLxD): 530 x 627 x 43.5mm
Weight: 5kg
O 3032

10 Year limited Output Guarantee **$499**

12 Volt 40 Watt 36 Cells



Sturdy anodised aluminium frame .
Peak Power Watts: 40W.
Current at Peak Power: 2.34A.
Voltage at Peak Power: 17.10V.
Size: 433 x 958 x 38.5mm (WxLxD).
Weight: 5.2kg
O 3045

10 Year Limited Output Guarantee **$549**

12 Volt 60 Watt 36 Cells

Sturdy anodised aluminium frame.
Peak Power Watts: 60W
Current at Peak Power: 3.51A.
Voltage at Peak Power: 17.0V.
Size: 530 x 1188 x 38.5mm (WxLxD).
Weight: 7.5kg
O 3060

10 Year Limited Output Guarantee **$799**

Available on special order

12 Watt 12 Volt Panel 32 cells	O 3012	**$299**
46 Watt 12 Volt Panel 32 cells	O 3046	**$599**
75 Watt 12 Volt Panel 32 cells	O 3075	**$999**

12V 20A Regulator

For use with solar panels. Maintains batteries in high state of charge & protects against over charging.
O 3121

$99

Solar Modules

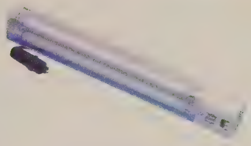
Used individually or interconnected for increased voltage (series) or current (parallel).

0.45V 400mA	O 2000	**$3.95**
0.45V 1A	O 2001	**$9.95**
2.0V 200mA	O 2011	**$9.95**

Solar Modules

New solar modules feature tough coatings and weather protection for those rough and hot applications.

1.0V 250mA	O 2013	**$7.95**
1.5V 500mA	O 2015	**$14.95**
2.0V 500mA	O 2017	**$17.95**



Fluoro Light 12V

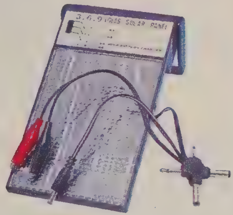
Ideal for use with solar panels. Can operate using 1 or 2 tubes and comes with power lead and cigarette lighter plug attached.
O 3198

$34.95

Charger 4 x "AA"

Charges 1 x "AA" size battery in 2-3 hours, 2 x "AA" batteries in 4-6 hours, 3 x "AA" batteries in 7-10 hours and 4 x "AA" batteries in 10-14 hours in full sunlight. Batteries not included
O 2003

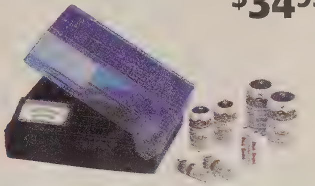
$14.95



Charger 3/6/9V Output

Comes with multi-adaptor two-metre cord, alligator clips, 2.5mm, 2.1mm &1.3 mm female plugs, 3.5mm, 2.5mm male plugs. Supplies 3V or 4V at 100mA, 6V or 9V at 50mA.
O 2004

$24.95



Solar NiCad Charger With Meter

Includes a meter that lets you know how strong the sunshine is and how long the batteries need to be charged. Suitable for charging AAA/AA/C/D and Prismatic batteries.
O 2009

$29.95

Weather Proof Solar Torch

This water resistant torch has a nylon strap, a bicycle mounting kit, flashing LEDs and includes a warning light.
O-2045

$24.95

Solar Powered AM/FM Radio

Excellent for emergency kits, this compact radio has a built-in FM antenna and can be powered four ways: through solar power, an AC/DC adaptor, AA batteries or a Dynamo generator.
O 2051

$39.95

Solar Powered Radio Torch Siren

A must for camping trips, this compact torch with radio has AM/FM reception, an emergency siren, flashing torch and can be powered through solar energy, an AC/DC adaptor, AA batteries or a Dynamo generator.
O 2052

$49.95

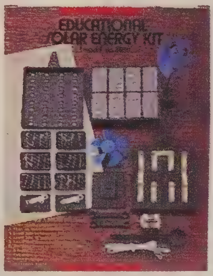
Solar Educational Kit
ENERGY

Solar Educational Kit

- A fun inexpensive way to learn about solar energy.
- Comes with solar cell module, solar-powered motor, wires and plastic turntables.

K 1060

$14.95



Solar Energy Kit

- Build a solar-powered fan!
- Comprehensive booklet, solar panel, DC motor, fan, motor stand, connection links, spanner and wiring.

K 1066

$24.95

Build A Solar Aeroplane!

4-IN-1
SOLAR CONSTRUCTION

Solar 4-in-1 Construction Kit

This plastic construction kit makes aeroplanes, helicopters and more. It includes a motor powered by a small solar module that can be connected to the finished designs to make them move.
O 2033

$24.95

PC Complete

1,000 pages gives this book the room to cover an amazing breadth of information. Learn all about your computer's hardware and software to take advantage of all your PC has to offer.

NEW FOR '99
1,000 Pages ONLY $19.99!
PC
World's #1 Computer Book Value
COMPLETE

Cat B 7470

$29.95

Internet Complete

If you're a new computer user, you'll learn how to get connected and take advantage of all that the Internet and the World Wide Web have to offer. Start off with e-mail and browsing, and then move on to tips on Web publishing.

NEW FOR '99
1,000 Pages ONLY $19.99!
Internet
COMPLETE

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Windows 98 Complete

A one-of-a-kind computer book created to provide new users and upgraders essential Windows 98 coverage and more general computer knowledge so that you get the most out of Windows 98 immediately.

NEW FOR '99
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Windows 98
COMPLETE

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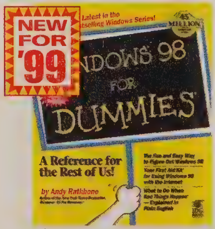
Dummies Series

Practical, fun and easy to use books that cover topics with humour and entertainment. Not only are they the most fun you can have learning, they include helpful icons, tips and examples that will help you master your software and PC in no time!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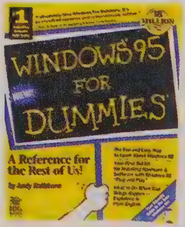
WINDOWS 98 FOR DUMMIES
A Reference for the Rest of Us!
by Andy Rathbone

Windows 98 for Dummies

Basic step-by-step guide to Windows 98 and finding your way around.

Cat B 6556

$39.95

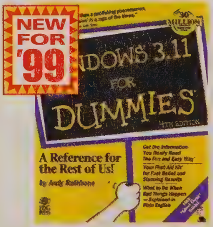

WINDOWS 95 FOR DUMMIES
A Reference for the Rest of Us!
by Andy Rathbone

Windows 95 for Dummies 2nd Edition

Takes you through Windows 95 painlessly. Updated to take advantage of new enhancements in Windows 95.

Cat B 6521

$39.95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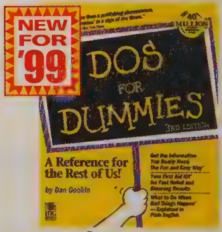
WINDOWS 3.11 FOR DUMMIES
4TH EDITION
A Reference for the Rest of Us!
by Andy Rathbone

Windows 3.11 for Dummies 4th Edition

The classic authority on navigating Windows 3.11 operating system.

Cat B 6613

$39.95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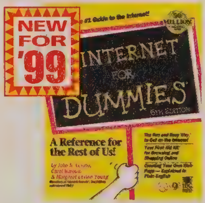
DOS FOR DUMMIES
3RD EDITION
A Reference for the Rest of Us!
by Dan Gookin

MSDOS for Dummies 3rd Edition

A beginner's guide to DOS provides readers with everything they need to know about the operating system.

Cat B 6523

$39.95

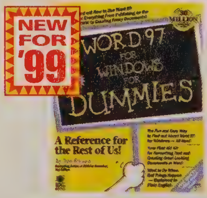

NEW FOR '99
INTERNET FOR DUMMIES
6TH EDITION
A Reference for the Rest of Us!

Internet for Dummies 6th Edition

Covers the latest tools and techniques to help get you up and running on the Internet in no time. Find what you're looking for quickly and easily.

Cat B 6631

$39.95

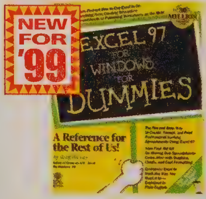

NEW FOR '99
WORD 97 FOR WINDOWS FOR DUMMIES
A Reference for the Rest of Us!

Word 97 for Dummies

Sound advice and step-by-step details on everything from Word basics to advanced features.

Cat B 6616

$39.95


NEW FOR '99
EXCEL 97 FOR WINDOWS FOR DUMMIES
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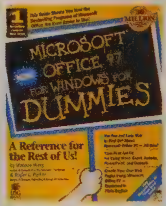
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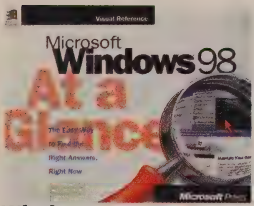

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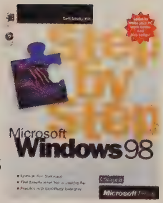

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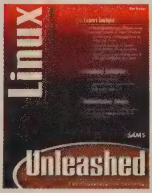

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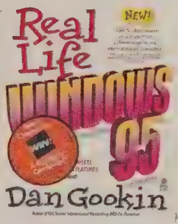

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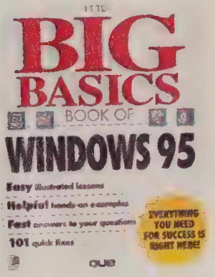

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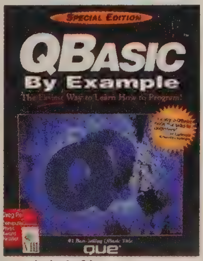

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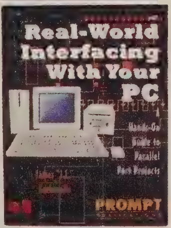

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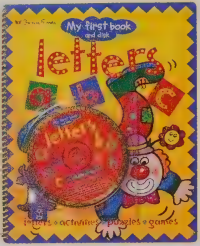
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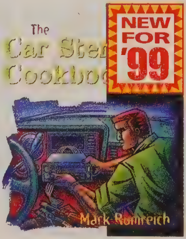
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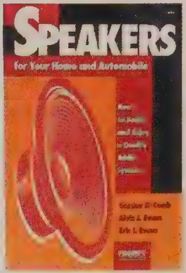
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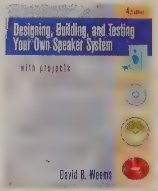
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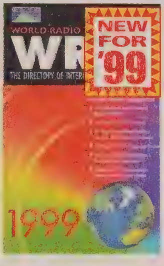
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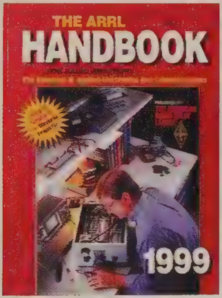
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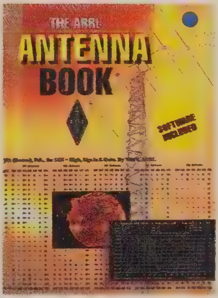
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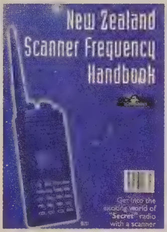
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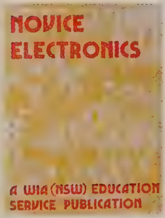
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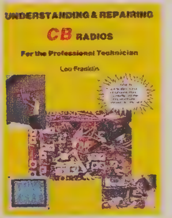
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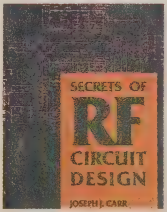
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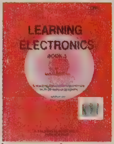
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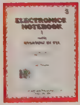
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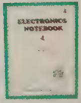
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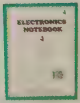
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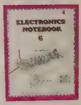
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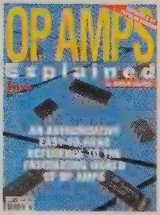
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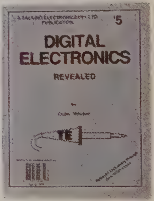
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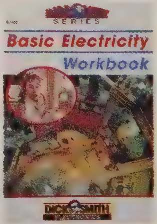
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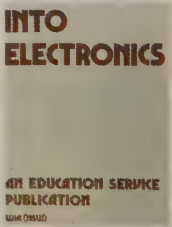
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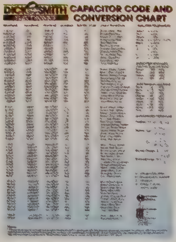
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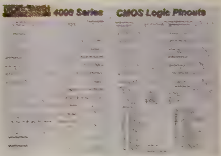
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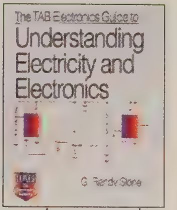
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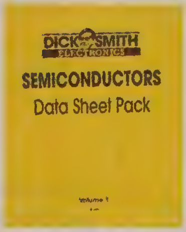
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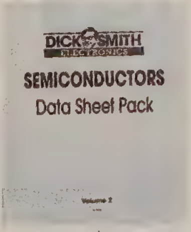
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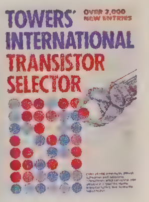
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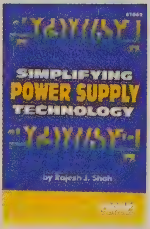
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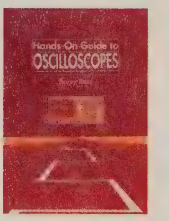
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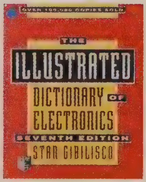
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Designed to hold and protect up to 12 magazines or thin-bound books to a maximum size of 280 x 210mm.

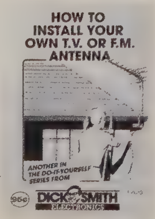
Cat B 4045

$7.95

How To Install Your Own TV/FM Antenna

A comprehensive do-it-yourself guide to make the job of installing an antenna a whole lot easier.

Cat B 6010

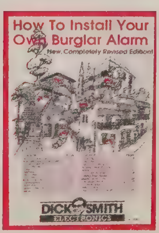

HOW TO INSTALL YOUR OWN T.V. OR F.M. ANTENNA
ANOTHER IN THE DO-IT-YOURSELF SERIES FROM
DICK SMITH ELECTRONICS

$1.95

How To Install Burglar Alarms

A new, completely revised edition! Includes clear diagrams and instructions to make securing your house a breeze.

Cat B 6012


How To Install Your Own Burglar Alarm
New, Completely Revised Edition!
DICK SMITH ELECTRONICS

$4.95

Troubleshooting & Repair

How Electronic Things Work... and What to Do When They Don't

With this fully illustrated, simple to use guide, you will get a grasp on the workings of the electronic world that surrounds you – and even learn to make your own repairs.

Cat B 1623

$\$59^{95}$

Electronic Things
Robert Goodman

Troubleshooting & Repairing Consumer Electronics

A guide to repairing common products such as TVs, stereo, car radios, CDs etc.

Cat B 1638

$\$59^{95}$

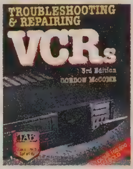
Troubleshooting & Repairing Consumer Electronics without a Schematic

Troubleshooting & Repairing VCRs 3rd Edition

Step-by-step details on home VCR maintenance to troubleshooting power supplies and logic circuitry problems.

Cat B 1640

$\$59^{95}$

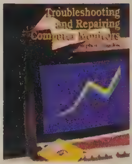

TROUBLESHOOTING & REPAIRING
VCRs
3rd Edition
GORDON McCOMB
TAB

Troubleshooting & Repairing Monitors

This popular book covers most of the problems encountered and how to overcome them.

Cat B 1645

$\$69^{95}$


Troubleshooting and Repairing Computer Monitors

Project Books

5 More FM Bugs

Shows how to build and use, 5 more miniature FM receivers plus topical subjects on radio transmission and security.

Cat B 3651

$\$4^{95}$

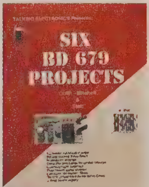
5 MORE FM BUGS

Six BD679 /BD681 Projects

Covers six projects based on the BD679 Darlington transistor. Also includes a computer evaluation project.

Cat B 3638

$\$4^{95}$

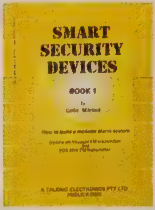

SIX BD 679 PROJECTS

Smart Security Devices

Save money and build your own modular alarm system or add to your existing setup.

Cat B 3652

$\$6^{95}$


SMART SECURITY DEVICES
BOOK 1

Electronics for Model Railways

A practical and easy-to-follow guide to electronics in model railways covering level crossing lights, signals, tunnel stretchers, fibre optics, computers, railways and more.

Cat B 3642

$\$7^{95}$

ELECTRONICS for MODEL RAILWAYS
BOOK 2

Mechanical Devices for the Electronics Experimenter

Design, build and adapt mechanical devices!

Cat B 1632

$\$44^{95}$

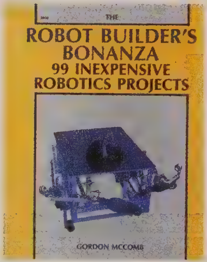
MECHANICAL DEVICES FOR THE ELECTRONICS EXPERIMENTER
HYDRAULICS
PNEUMATICS
SOLENOIDS
GEAR TRAINS
VACUUM ACTUATORS
TAB

Robot Builders Bonanza

99 inexpensive robotics projects. A modular construction approach allows customisation of projects.

Cat B 1605

$\$44^{95}$

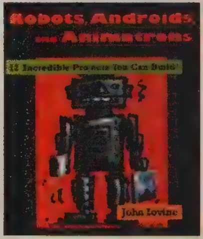

THE ROBOT BUILDER'S BONANZA
99 INEXPENSIVE ROBOTICS PROJECTS
GORDON McCOMB

Robots Androids & Animatrons

This book provides a unique construction guide of a robot, animatron or android that can be built in a workshop.

Cat B 1598

$\$49^{95}$

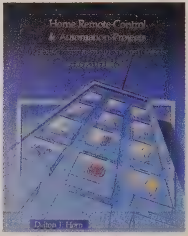

Robots, Androids and Animatrons
John Iovine

Home Remote Control Projects

Gives an introduction on the basics of remote control and automation then goes on to give complete instructions for various all new projects.

Cat B 1614

$\$34^{95}$

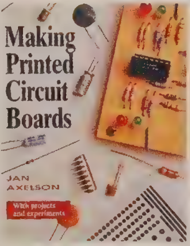

Home Remote Control & Automation Projects

Making Printed Circuit Boards

Takes the reader step-by-step from schematic diagram to finished project and includes 25 different projects to get you started.

Cat B 1630

$\$54^{95}$

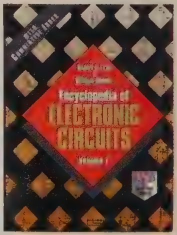

Making Printed Circuit Boards
JAN AXELSON
With projects and experiments

Encyclopedia Electronic Circuits Vol 7

Contains new circuits drawn from Popular Electronics, ETI, Elektor, RCA, GE, National Semiconductors, Radio Electronics and more.

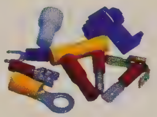
Cat B 1768

$\$99^{95}$


Encyclopedia of ELECTRONIC CIRCUITS

Connectors

Quick Crimp Connector Packs



A thousand and one uses around the home, workshop, garage, etc. Quick crimp makes fixing and joining electrical cables fast, easy and effective.

Description	Qty	Cat No
2.8mm Female/Recept. Red	10	H 3043
3mm eye. Red	10	H 3010
3mm open end spade. Red	10	H 3015
4mm eye. Red	10	H 3011
4mm open end spade. Blue	10	H 3036
4mm bullet male. Red	10	H 3026
4mm bullet female. Red	10	H 3027
4.8mm Female/Recept. Red	10	H 3044
5mm eye. Red	10	H 3012
5mm eye. Blue	10	H 3031
5mm eye. Yellow	10	H 3060
5mm open end spade. Yellow	10	H 3065
5mm bullet male. Blue	10	H 3050
5mm bullet female. Blue	10	H 3055
6mm eye. Blue	10	H 3032
6mm eye. Yellow	10	H 3061
6.3mm Female/Recept. Insulated Red	10	H 3046
6.3mm Male Tab. Blue	10	H 3042
6.3mm spade. Red	10	H 3024
6.3mm spade socket. Red	10	H 3022
6.3mm spade socket. Blue	10	H 3040
6.3mm insulated spade socket. Blue	10	H 3048
6.3mm piggyback. Blue	10	H 3045
6.3mm Ml/Fem/Ml wire double adaptor	10	H 3080
8mm eye. Blue	10	H 3033
8mm eye. Yellow	10	H 3062
10mm eye. Yellow	10	H 3063
Straight wire joiner. Red	10	H 3020
Straight wire joiner. Blue	10	H 3038
Quick tab joiner. No stripping required	10	H 3085

Quikcrimp

$5.50 pk

Description	Qty	Cat No
4mm Male bullet connector. Red	50	H 3087
4mm Female bullet connector. Red	50	H 3088
4.8mm Female recept. Red	50	H 3090
6.3mm Female recept. Red	50	H 3092
6.3mm Female recept. Blue	50	H 3093
6.3mm Female insulated recept. Red	50	H 3094

$12.95 pk

Assorted Crimp Lug Pack

30 crimp lugs of various types and sizes including joiners. All with insulation attached.

Cat H 1996

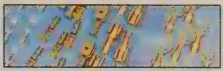
$8.95 pk

Crimp-On Connectors

In packs of 10.

Small	Cat H 1774	**$2.25**
Large	Cat H 1776	**$2.75**

Utilux Connectors



5.0mm Anti-Vibe Eye Term.	Cat H 5040	Pkt 25
3.4mm Eye Terminal	Cat H 5041	Pkt 25
4.2mm Eye Terminal	Cat H 5042	Pkt 25
5.0mm Eye Terminal	Cat H 5043	Pkt 25
Male Bullet Cover	Cat H 5045	Pkt 20
Female Bullet Cover	Cat H 5046	Pkt 20
Male Bullet Terminal	Cat H 5047	Pkt 25
Female Bullet Terminal	Cat H 5048	Pkt 25
6.3mm Quick Connect/Tab	Cat H 5049	Pkt 20
6.3mm Quick Connect/Dbl	Cat H 5051	Pkt 20
2.8mm Male Lug	Cat H 5052	Pkt 25
2.8mm Female Lug	Cat H 5053	Pkt 25
6.3mm Male Lug	Cat H 5054	Pkt 25
6.3mm Female Lug	Cat H 5055	Pkt 25
6.3mm Lug Cover	Cat H 5056	Pkt 20
6.3mm Male/Female Cover	Cat H 5057	Pkt 12

UTILUX

$7.50 pk

50 Piece LUG Set

Quality Utilux crimping tool and 50 piece lug set. Includes a range of spade, bullet lugs and joiners

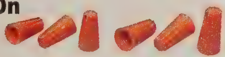
Cat H 5060

$29.95

Solder Type Quick Connectors

Description	Qty	Cat No	Price
2.8mm Spade Male	15	H 5038	$3.95
2.8mm Spade Female	15	H 5036	$3.95
5mm Eye Terminal	12	H 5032	$3.95
6.3mm Spade Male	10	H 5016	$3.95
6.3mm Spade Female	10	H 5012	$3.95
6.3mm Plastic Covers	10	H 5022	$3.45
Bullet Terminals Male	10	H 5006	$3.95
Plastic Cover suit above	10	H 5007	$2.95
Bullet Terminals Female	10	H 5008	$3.95
Plastic Cover suit above	10	H 5009	$2.95

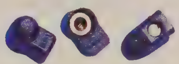
Wire Twist-On Connectors



In packs of 10.

Small	Cat H 1770	$2.25
Large	Cat H 1772	$2.75

BP Connectors

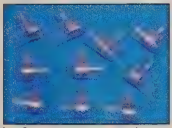


The quick and easy way to join or terminate wire. Suitable for 240 volts. Simply wind the wire, slip it in and tighten the screw. In packs of 10.

Cat H 6710

$5.45 pk

Clear Cable Connectors



The quick and easy way to join or terminate cable. Suitable for 240V. Rated 380V @ 25A.

Cat H 6715

$5.45 10pk

Wire Tab Joiner

NEW FOR '99

Joins two wires easily, just insert and clamp.

Cat H 1780

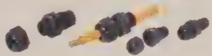
$4.95 pk

Grommets

Heavy duty grommets which are essential for the prevention of fraying and shorts where a cable passes through a chassis, etc.

Hole Size	Bore Size	Qty	Cat No.	Price per pk
8mm	5.5mm	10	H 1712	$3.45
12mm	6mm	10	H 1716	$3.95
16mm	9mm	8	H 1719	$4.45

Nylon Cable Glands



They're water-tight and screw together to give coax (or any other sort of cable that will fit) perfect protection! Petrol and oil resistant, totally submersible.

Qty. 2 (4-6mm Cable) Cat H 1930

Qty. 2 (5-10mm Cable) Cat H 1932

$5.95 pk

Cord Clamp Grommets

A self-locking grommet that maintains a grip on the cable without separate clamps. In pack of 4. Suits 3-core light-duty mains flex or equivalent size cable. Hole size 12-16mm.

Cat H 1724 & Cat H 1725

$2.95 ea

Flexible Grommets

Easily cut to required length.

1.0mm x 2m long	Cat H 1720	$0.95
1.5mm x 2m long	Cat H 1721	$0.95
2.4mm x 2m long	Cat H 1722	$0.95

Desk Grommets

Tidy computer cords on desks. 60mm diameter.

NEW FOR '99

Black	Cat H 1730	$7.95
Almond	Cat H 1731	$7.95
Grey	Cat H 1732	$7.95

Cable Clamps

Cable Clamps

Heavy duty nylon cable clamps. In packs of 5.

Cable Diameter	Cat No	Price/pk
5mm	Cat H 1964	$2.50
6mm	Cat H 1965	$2.95
8mm	Cat H 1966	$3.25

Stick-On Cable Clips

Adhesive backed plastic clips to hold your cable in place.

Large White	PK of 10	Cat H 1904	$7.95
Small White	PK of 20	Cat H 1906	$11.95

Cable Ties

Tough and flexible, with non-slip locking action to ensure the tie won't slacken or fall off. All sizes are in hand packs of 100, 30 and 25. Indoor ties are a neutral colour, outdoor ties are black.

Indoor Use - Colour Neutral

Size	Pack Qty	Cat No.	Price
102 x 2.5mm	25	H 1950	**$2.95/pk**
194 x 2.5mm	25	H 1951	**$3.50/pk**
292 x 3.5mm	25	H 1952	**$5.95/pk**
370 x 4.8mm	25	H 1953	**$6.95/pk**
102 x 2.4mm	100	H 1974	**$7.95/pk**
194 x 2.4mm	100	H 1976	**$13.95/pk**

Outdoor Use - Colour Black

Size	Pack Qty	Cat No.	Price
102 x 2.4mm	25	H 1955	**$2.95/pk**
194 x 2.4mm	25	H 1956	**$3.95/pk**
292 x 3.6mm	25	H 1957	**$6.45/pk**
370 x 4.8mm	25	H 1958	**$7.95/pk**
102 x 2.4mm	100	H 1980	**$9.95/pk**
194 x 2.4mm	100	H 1982	**$13.95/pk**

Packs of Assorted Cable Ties

Neutral Pack of 30	H 1960	**$4.45**
Black Pack of 10	H 1962	**$4.95**

Releasable Cable Ties

Cable ties that can easily be released and re-tied. They're suitable for indoor or outdoor use. In handy packs of 100.

100mm x 4.5mm	H 1995	**$9.95pk**
194mm x 4.5mm	H 1997	**$16.95pk**

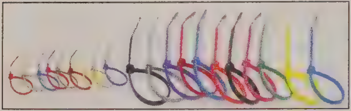
Cable Ties

A. Identity Tag (tie length 102mm)	Pack 25	H 1973	**$3.95**
B. Identity Tag (tie length 194mm)	Pack 25	H 1975	**$6.95**
C. Push Mount (tie length 155mm)	Pack 25	H 1971	**$7.95**

Mixed Pack Terminals/Ties/Clips

Handy selection for all your hobby and project needs.
Cat H 3099

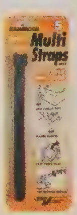
$9.95



Mixed Coloured Cable Ties

Small 96mm (10 cols x 10 pcs)	Pack 100	H 1959	**$12.50**
Large 190mm (10 cols x 10 pcs)	Pack 100	H 1961	**$19.95**

Velcro Cable Ties



These handy cable ties are made from the original 'Velcro' brand material. Ideal for too many uses to list here, they're reusable time and again. 200mm x 12mm. Pack of 5.
Cat H 1945

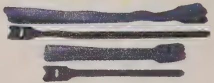
$8.50

Wonder Colour Cable Strap

Pack of 10 15mm x 165mm.
Cat H 1949

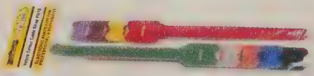
$9.95

Velcro Cable Straps



Reusable cable ties that you can open or close to add or remove cables. Packs of 10.

25 x 200mm	H 1946	**$14.95**
25 x 300 mm	H 1947	**$17.50**

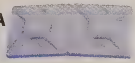


Velcro Colour Cable Strap

10 pack of 25mm x 200mm (reusable) mixed.
Cat H 1948

$14.95

Cable Tie Mounts

A


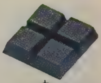
B

Self adhesive mounts with slot for securing cable ties to instrument cases etc.

A. 19 x 19mm	Pack 10	H 1989	**$3.95**
B. 25 x 25mm	Pack 50	H 1993	**$14.50**

Rubber Feet

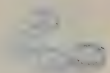
Self Adhesive (Small)



15mm x 15mm square rubber feet. Pack of 4.
Cat H 1745

$2.75

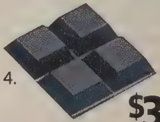
Acrylic Feet



Self adhesive clear acrylic feet. Pack of 4.
Cat H 1740

$2.75

Self Adhesive (Large)



20mm x 20mm rubber feet. Pack of 4.
Cat H 1749

$3.95

Rubber Feet 11mm x 5mm

Pack of 4.
Cat H 1748

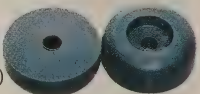
$2.95

Screw-On Round

13mm round rubber feet. 3mm fixing hole. Pack of 8.
Cat H 1736

$3.95

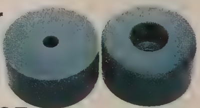
Large Rubber Feet



Pack of 4. 18mm (D) x 10mm (H).
Cat H 1741

$4.50

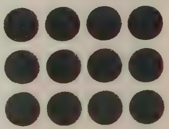
Jumbo Rubber Feet



Pack of 4. 34mm (D) x 17mm (H).
Cat H 1739

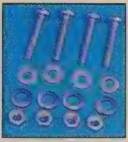
$6.95

Felt Adhesive – Medium Duty Felt



13mm round	H 1750	**$2.95**
19mm round	H 1751	**$3.25**
25mm round	H 1752	**$3.45**

Nuts & Bolts



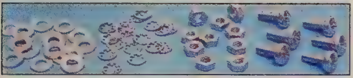
M2 Screws/Nuts/ Washers

Contains 12 x 12mm zinc plated bolts, 12 nuts and 12 washers.
Cat H 1683 **$9.95 pk**

M2.5 Screws/Nuts/ Washers

Zinc-plated round head. Size 2.5mm.

Description	Qty	Cat No	Price
9mm Bolt	25	H 1206	$3.50
12mm Bolt	25	H 1208	$3.75
25mm Bolt	25	H 1212	$3.95
Hexagonal Nut	25	H 1200	$2.95
Flat Washer	50	H 1202	$2.45



M3 Screws/Nuts/Washers

Zinc-plated round head. Size 3mm.

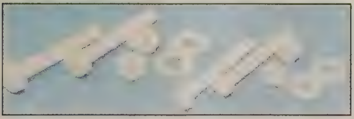
Description	Qty	Cat No	Price
9mm	25	H 1054	$3.50
12mm	25	H 1064	$3.75
25mm	25	H 1074	$3.95
Hex Nut	30	H 1324	$2.95
Shake-Proof Washer	50	H 1472	$2.95
Flat Washer	50	H 1482	$2.95

M4 Screws/Nuts/Washers

Zinc-plated steel screws with Philips combination head. Size 4mm.

Description	Qty	Cat No	Price
9mm	25	H 1492	$2.25
12mm	25	H 1494	$2.45
25mm	25	H 1498	$2.65
Hexagonal Nut	25	H 1487	$2.45
M4 S-proof Steel Washer	50	H 1486	$2.95
M4 Flat Steel Washer	50	H 1488	$2.95

Nylon Nuts & Bolts



White nylon cheese head screws, resistant to high temperatures. Ideal for transistor and heatsink use.

Description	Qty	Cat No	Price
Size - 4BA12mm Screw	10	H 1012	$0.95
25mm Screw	10	H 1022	$0.95
4BA Hex Nuts	12	H 1302	$1.95
4BA Washers	12	H 1452	$0.95
Size - 6BA			
12mm Screw	10	H 1032	$0.95
25mm Screw	12	H 1042	$0.95
6BA Hex Nuts	12	H 1312	$1.95
6BA Washers	12	H 1462	$0.95

Nylon Nuts & Bolts

Insulated Type

Insulated spacers complete with screws and washers. 8mm outside diameter requiring a 3mm clearance hole. Pack of 5.

Description	Qty	Cat No	Price
10mm	5	H 1861	$5.95
15mm	5	H 1862	$6.25
20mm	5	H 1871	$6.50
25mm	5	H 1872	$6.95

Round Brass

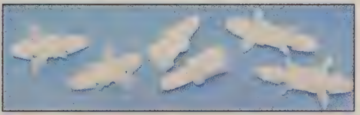
Packs of 6mm outside diameter, round brass spacers with 3.7mm inner clearance.

Description	Qty	Cat No	Price
6mm	12	H 1831	$5.95
9mm	10	H 1832	$5.95
12mm	8	H 1833	$5.95
25mm	6	H 1834	$5.95

Tapped Spacers

Zinc-plated steel-tapped hexagonal spacers to suit M3 screw. Packs of 6.

Description	Cat No	Price
9mm	H 1882	$3.95
12mm	H 1884	$4.45
19mm	H 1886	$4.95
25mm	H 1888	$5.45



Circuit Board Supports

Nylon PCB supports perfect for projects where PCB mounting holes are close to tracks. Require 4mm drilling in the PCB and 4.75mm clearance hole in chassis.

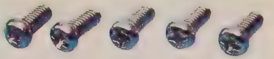
Description	Qty	Cat No	Price
10mm	6	H 1981	$2.45
5mm x M3	8	H 1983	$2.45
10mm	8	H 1987	$2.45

Right-Angle Metal Brackets

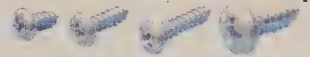
Measuring 8mm x 16mm x 6mm wide with 3mm clearance and one adjustable slot.
Pack of 6.
Cat H 1895 **$9.95 pk**

Screws

Switch Screws



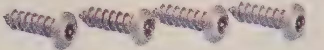
Pack of 10 screws suitable for most switches with threaded mounting holes. Each 2mm x 5mm.
Cat H 1674 **$2.95 pk**



Self-Tapping Screws

Zinc-plated self-tapping screws. In handy packs.

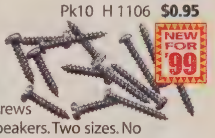
Description	Qty	Cat No	Price
No. 4 x 6mm	25	H 1611	$2.25
No. 4 x 9mm	25	H 1634	$2.45
No. 4 x 12mm	25	H 1612	$2.95
No. 8 x 12mm	25	H 1632	$3.25



Security Torx Bolts & Screws

Self-Tap Torx Screws 9.5mm	Pk20	H 1100	$4.95
M3 Bolt Torx 9mm Zn T8	Pk10	H 1102	$0.95
12mm Zn T8	Pk10	H 1104	$0.95
25mm Zn T8	Pk10	H 1106	$0.95

Speaker Woodscrews



Black Phillips head screws ideal for mounting speakers. Two sizes. No 10 for woofers and No 6 for tweeters, mid-range, crossover etc.

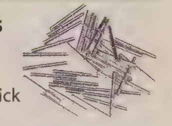
No 6 x 15 mm	H 1620	$3.95
No 10 x 30 mm	H 1621	$4.45

Mixed Computer Screw Pack

10pcs x 6 types of the most commonly used computer screws.
Pack of 60.
Cat H 1675 **$5.45**

Matrix Boards Pins & Sockets

Matrix Board Pins

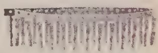


Matrix board pins are designed to make connections to PCBs quick and easy.

1mm Round
Pack of 50
Cat H 5590 **$3.95**

Flat Pin
Pack of 25
Cat H 5594 **$2.95**

Wire Wrap Pin
Pack of 25
Cat H 5595 **$1.95**

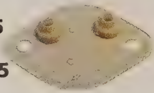


Matrix Sockets
Socket to suit. Pack of 25.
Cat H 5592 **$4.95**

Transistor Insulator

Mica Washer Insulation Kits

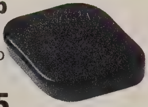
Packs of 4



Cat H 1917	TO-3	**$2.95**
Transistors plus bushes		
Cat H 1937	TOP-3	**$1.95**
Transistors		
Cat H 1936	TA-11B transistors	**$1.95**
Cat H 1938	TO-264 transistors	**$1.95**

For heatsinks and heat transfer compounds, see page 202.

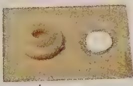
TO-3 Insulating Cap



High quality plastic cap that simply press-fits onto TO-3 transistors.

Cat H 1918 **$1.25**

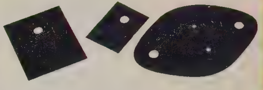
TO-220 Mounting Kit



Pack of 5 quality insulating washers and bushes to suit TO-220 type semis.

Cat H 1916 **$2.75 pk**

NEW FOR '99



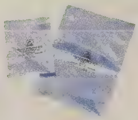
Silicon Insulators

Transistor washers that do not require silicon grease but have the same effectiveness as mica and grease. Packs of 10.

Cat H 2916	TO-220	**$2.25**
Cat H 2918	TO-3P	**$2.75**
Cat H 2917	TO-3	**$4.45**

Anti-Static Devices

Anti-Static Bags



In packs of 5

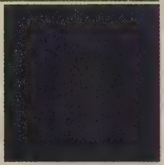
H 6020	76 x 127mm	**$0.95**
H 6025	76 x 203mm	**$1.25**

Limited Stocks

Anti-Static Sheet

Dissipate dangerous static electricity which can destroy semiconductors in integrated circuit chips (ICs). By pushing the semiconductor legs firmly into the sheet, introduction of static electricity is virtually eliminated. Sheets can be cut down in size. 125 x 125mm sheet.

Cat H 1737 **Limited Stock Available** **$1.95**



Magnets

4 Piece Magnet Set

Great for hobby use and for experimenting with magnetic fields. 4-piece includes: horseshoe, circular and two bar magnets.

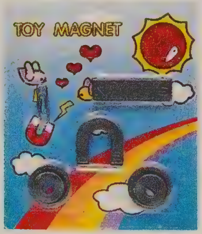
Cat H 6000

$4.95

6 Piece Magnet Set

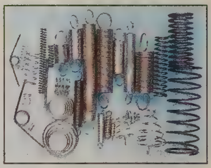
6-piece includes: horseshoe, bar and four circular magnets.

Cat H 6005 **$5.50**



Springs

Mixed Spring Pack



With 30 different springs including battery terminal springs, compression springs, tension springs and loop/return springs. 30 pieces.

Cat H 1676 **$9.95 pk**

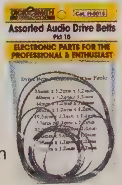
Drive Belts

Audio Drive Belts

Comes in assorted packs of 10. Sizes includes:

25mm x1.2mm x1.2mm
40mm x1.2mm x1.2mm
44mm x1.2mm x1.2mm
46mm x1.2mm x1.2mm
49.5mm x1.2mm x1.2mm
57mm x1.2mm x1.2mm
105mm x1.2mm x1.2mm
125mm x1.2mm x 1.2mm
82.5mm x1.4mm x 1.4mm
100mm x1.6mm x 1.62mm

Cat H 6015 **$7.45 pk**

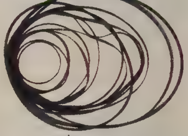

Assorted Audio Drive Belts
ELECTRONIC PARTS FOR THE PROFESSIONAL & ENTHUSIAST

Video Drive Belts

Comes in assorted packs of 14. Sizes includes:

22mm x 1.2mm
40mm x 1.2mm
45mm x 2.0mm
60mm x 1.0mm
70mm x 1.0mm
83mm x 1.6mm
97mm x 1.2mm
98mm x 2.4mm
114mm x 1.8mm
121mm x 12.3mm
56mm x 0.8 x 8.0mm
76mm x 0.6 x 6.0mm
91mm x 0.6 x 5.8mm
92mm x 1.2 x 10.0mm

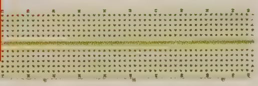
Cat H 6016



$12.50 pk

Breadboards

NEW FOR '99



WBU-DJ Breadboard Addon

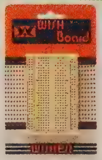
High class acetal material allows insertion hole to withstand wear and tear without easily deforming.

Tiny H 4033 **$8.45** Medium H 4034 **$14.95**

Also available:
Jump Wire Kit $12.50

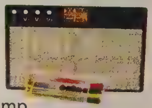
Breadboards

Similar to the Breadboard Kits, only without the baseplate. Clip together to make boards to just about any required size. Supplied as board only.



No. Distributed Buses		Holes	No Buses	Cat No	Price
Small	2	300	60	H 4035	**$12.95**
Medium	4	630	126	H 4045	**$18.95**
Medium	8	640	128	H 4044	**$19.95**
Large	10	800	160	H 4025	**$24.95**

Breadboard Kits



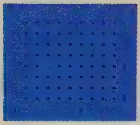
Mounted on a baseplate with non-slip feet and hole for binding posts, each has a selection of jump wires and binding posts.

No. Distributed Buses		Holes	No Buses	Cat No	Price
Small	10	300	160	H 4020	**$39.95**
Medium	8	800	252	H 4040	**$49.95**
Medium	4	1600	340	H 4041	**$54.95**
Large	14	2520	504	H 4042	**$59.95**
X-Large	30	3200	640	H 4022	**$84.95**

Plastic Project Board

122 x 110 x 14mm plastic breadboard as used in Funway Into Electronics. 98-hole matrix for connections and securing components.

Cat H 4050 $\$3^{95}$



Aluminium Sheet

Blank aluminium sheet ideal for making front panels and folding into small boxes. 18 gauge, measures 300 x 300mm.

Cat H 2560 $\$12^{95}$

Blank Printed Circuit Boards

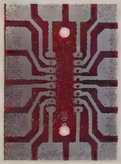
Heavy duty FR-4 epoxy glass PC board with permanently bonded 1oz copper on one or both sides. Three sizes.

150x74mm	H 5540	**$4.95**
150x150mm	H 5545	**$6.95**
300x300mm	H 5550	**$17.50**
Double sided		
150x74mm	H 5555	**$5.95**
150x150mm	H 5560	**$7.95**
300x300mm	H 5565	**$18.95**

16-Pin IC PCB Board

Save time and money with this pre-etched, pre-drilled, pre-cut 16-pin PCB. Use in most projects. Measures 54mm x 38mm. Pre-drilled mounting holes.

Cat H 5600 $\$3^{50}$



8 to 20 Pin Dual IC PCB Board

Dual PCB boards are pre-etched and pre-drilled. Use both sides of the PCB boards that are pre-drilled 8 to 20-pin wide or cut in half and use as separate PCBs.

Cat H 5601 $\$3^{95}$

Small Experiment Prototype Board

This small, versatile board has etched copper pads. Each board has 371 holes and is 47mm (W) x 72mm (L).

Cat H 5603 $\$3^{75}$

Small Prototype Board

This PCB allows for multiple ICs connections with its 118 links available. Each board has 310 holes, 44mm (W) x 75mm (L).

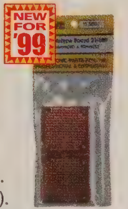
Cat H 5604 $\$3^{75}$

Medium Experiment Prototype Board

This PCB allows for multiple ICs connecting with its 98 links available. Each board has 417 holes and is 47mm (W) x 72mm (L).

Cat H 5608 $\$4^{50}$

PCB Dual Prototype Board



This small, versatile board has etched copper pads. Each board has 198 holes or a total of 396 holes for both sides. Use together or cut in half and use as separate PCBs. Size: 46mm (W) and 93mm (L).

Cat H 5607 $\$4^{50}$

Medium Prototype Board

This PCB also allows for multiple ICs connections. Also has numeric numbering system to facilitate positive pin identification. Each board has 503 holes, 49mm (W) x 131mm (L).

Cat H 5605 $\$4^{50}$

Large PCB Prototype Board

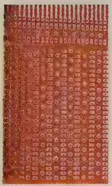
This versatile PCB has etched copper pads. Each board has 2,200 holes. Also has numeric and alphanumeric system to help positive pin identification and is 115mm (W) x 160mm (L).

Cat H 5609 $\$7^{50}$

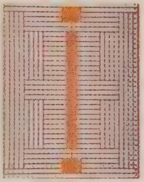
Plug-In IC Boards

With 2.54mm pin spacing to accept up to 14 x 14-pin or 16-pin ICs, or up to 20 mini-dip ICs. Silver-plated lands and 24-way plug for use with a 24-way edge connector. 60mm x 100mm.

Cat H 5610 $\$4^{95}$



Prototype Board



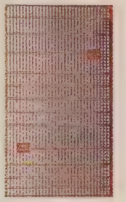
Designed by our R&D staff! Similar to 'Veroboard' but has the advantage of tracks running in both directions. Can accommodate digital designs. Typically 2 x 14 or 16 PIN, or 5 x 8 PIN devices. Tracks are corrosion-resistant plating punched with 936 holes on a 0.1" grid.

Cat H 5660 $\$5^{95}$

Printed Stripboards

The most versatile board! Etched copper strips are pre-drilled and plated ready for solder. Alphanumeric grid helps positive pin identification. Each board has 2.54mm hole spacings. Size 88 x 153mm.

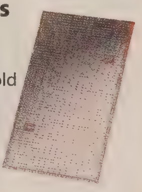
Cat H 5616 $\$7^{95}$



Versatile Stripboards

Continuous pre-drilled stripping on a high-grade insulator. It's similar to the old English Veroboard. 2.54mm hole spacing.

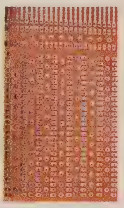
76x88mm	H 5614	**$4.95**
88x153mm	H 5612	**$5.95**
95x308mm	H 5112	**$9.95**



Printed Mounting Strip

A handy 47-way mounting strip for resistors, capacitors, etc. Terminals are numbered for easy identification.

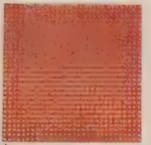
Cat H 5610 $\$4^{95}$



Matrix Board

Tough phenolic board with punched holes. Ideal for prototypes, bread boards, projects etc. 2.5mm hole spacings on a 75mm x 76mm board.

Cat H 5310 $\$3^{50}$



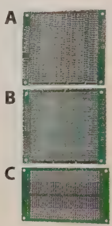
Fibreglass Board

Single sided printed circuit board, silk screened. 95 x 85mm, 948 holes.

A. Prototype H 5613 **$10.95**
B. Matrix H 5615 **$10.95**

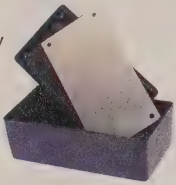
Double sided printed circuit board, silk screened. 103 x 60mm. 640 holes.

C. Prototype H 5611 **$11.95**



Zippy Boxes

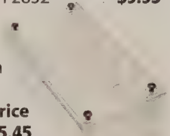
With Both Aluminium and Plastic Lids!



Preferred and used by the major electronics magazines because of their quality, versatility and value. Ideal for a wide range of applications, they're made from impact-resistant ABS plastic and have deep ribs which add to the strength and are ideal for mounting PCBs without screws. Each comes with two lids, one aluminium and the other plastic, which can be sealed against the weather.

Description	Size (mm)	Cat No	Price
Small - UB5	28 x 54 x 83	Cat H 2855	**$4.95**
Medium - UB3	41 x 68 x 130	Cat H 2853	**$5.95**
Large - UB1	50 x 90 x 150	Cat H 2851	**$6.95**
Giant UB2	60 x 113 x 196	Cat H 2852	**$9.95**

Clear Style Zippy Boxes



See your handy work clearly with these tough ABS plastic boxes with strengthened ribbing.

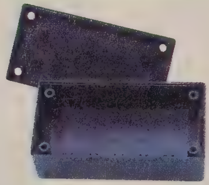
Description	Size (mm)	Cat No	Price
UB5 Style	28 x 54 x 83mm	Cat H 2955	**$5.45**
UB3 Style	41 x 68 x 130mm	Cat H 2953	**$6.45**

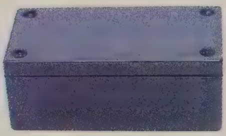
PCB Slot Boxes With "Tractor Grip"

If you're building a project that's PCB-based, these are exactly what you need! Available in seven handy sizes and made of strong grey ABS plastic, they come complete with case screws and 'tractor-grip' board supports that mesh with matching grooves on all four sides of the case's interior to ensure your PCB stays put! PCB not included.

Description	Size (mm)	Cat No	Price
55 x 55 x 42	(GG-01)	Cat H 2870	**$5.95**
75 x 50 x 27	(GG-02)	Cat H 2872	**$6.95**
85 x 56 x 40	(GG-03)	Cat H 2874	**$7.95**
100 x 50 x 40	(GG-04)	Cat H 2876	**$8.50**
125 x 60 x 40	(GG-05)	Cat H 2878	**$8.95**
145 x 85 x 50	(GG-06)	Cat H 2880	**$9.95**
180 x 110 x 60	(GG-07)	Cat H-2882	**$10.95**

Project Boxes

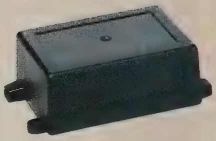




A great range of versatile project boxes. Ideal for a wide range of applications. The lids have four mounting stand-offs to easily accommodate PCB's.

Size (mm)	Cat No	Price
48 x 95 x 37	Cat H 2840	**$5.45**
60 x 115 x 43	Cat H 2841	**$6.45**
75 x 135 x 49	Cat H 2842	**$6.95**
95 x 160 x 61	Cat H 2843	**$7.95**

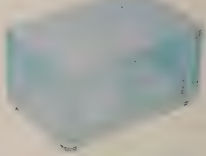
Utility Junction Black Box



They are ideal for many applications with square cable entries on each end.

Size (mm)WxLxDxH	Cat No.	Price
65 x 38 x 27	Cat H 2921	**$2.45**
82 x 57 x 33	Cat H 2923	**$3.45**

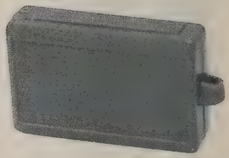
Small Clear Box



with pre-drilled speaker holes.
Ideal for small audio style projects.
83 x 55.5 x 44mm
Cat H 2858

$4.50

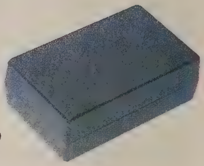
Plastic Case



Small plastic case that clips together.
Ideal as an alarm transmitter case.
60 x 45 x 10mm.
Cat H 2495

$5.45

PJ Box



A well finished mini case which is ideal for all-weather projects! Made in two identical halves which can be glued together for a water-tight seal. 90 x 56 x 32mm.
Cat H 2857

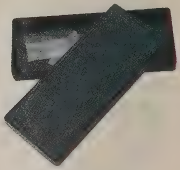
$6.45

Hand-held Case with Terminals, Red Lens

This case comes with two plastic panels, 1 grey and 1 red perspex. This case has a battery compartment that can accept 2 AA or a 9v Battery. 135mm(W) x 70mm (L) x 24mm(H).
Cat H 2949

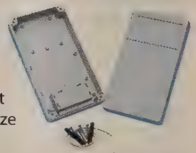
$12.50

Box with Battery Compartment



Small	139x55x23mm	Cat H 2950	**$11.95**
Large	183x73x28mm	Cat H 2951	**$16.95**

Handheld Case



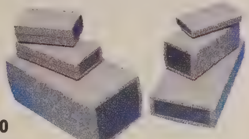
Features a battery compartment, a professional tilting stand, a solid display area that can be cut out if required. The top and bottom sections incorporate a tongue and groove sealing system which uses a gasket. It accepts either a 9V or 2 x AA batteries. The size is 180 x 100 x 40mm.
Cat H 2952

$19.95

Plastic Boxes

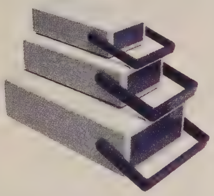
High Quality ABS Plastic Boxes

This range of moulded plastic cases are ideal for many kit and design applications.



Size (mm) L x W x H	Cat No	Price
90 x 50 x 16mm	Cat H 2831	**$4.50**
90 x 50 x 32mm	Cat H 2832	**$5.50**
120 x 60 x 40mm	Cat H 2833	**$7.95**
150 x 80 x 30mm	Cat H 2834	**$8.95**
190 x 100 x 40mm	Cat H 2835	**$13.50**
190 x 100 x 90mm	Cat H 2836	**$17.50**

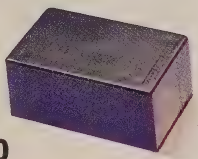
Hobby Box with Handle



Size (mm) L x W x H	Cat No.	Price
131 x 67 x 34mm	Cat H 2846	**$14.95**
131 x 67 x 57mm	Cat H 2847	**$15.95**
160 x 80 x 44mm	Cat H 2848	**$17.95**
197 x 110 x 56mm	Cat H 2849	**$19.95**

***Limited Stocks Available**

66x46x30mm Moulded Case



Perfect for small projects. Lid has flange mounts and it comes with matrix-style assembly board. Quality Japanese construction.
Cat H 2765

$12.50

Easy-Mount Boxes

Perfect for automotive applications, the bases of these project boxes have flanges that allow easy fastening to flat surfaces. Has ABS plastic casing and aluminium base.

100 x 40 x 50mm size no longer available

L x W x H	Cat No	Price
125 x 40 x 60mm	Cat H 2892	**$9.95**
145 x 50 x 85mm	Cat H 2894	**$12.95**

***Limited Stocks Available**

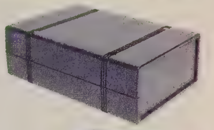
Sealed Polycarbonate Boxes

Made from tough polycarbonate thermoplastic, these 3mm wall thickness boxes are ideal for uses requiring a quality sealed enclosure that's more rugged than most ABS boxes. They feature a tongue and groove sealing system with a neoprene gasket, and the stainless steel lid fixing screws thread into brass inserts that are outside of the sealing area. These boxes are designed to IP65 of IEC529 and NEMA4 (dust and hoseproof), and have a wide – to 100°C operating temperature. Internal threaded brass inserts allow for easy mounting of PCBs or terminals.

Size (mm) L x W x H	Cat No	Price
115 x 65 x 40mm	Cat H 2860	**$12.95**
80 x 82 x 55mm	Cat H 2869	**$13.95**
115 x 90 x 55mm	Cat H 2863	**$14.95**
171 x 121 x 55mm	Cat H 2864	**$19.95**
121 x 171 x 80mm	Cat H 2867	**$24.95**
146 x 222 x 55mm	Cat H 2865	**$29.95**

Plastic Cases

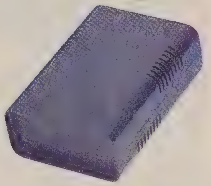
Black Plastic Instrument Case



88mm(W) x 128mm(L) x 43mm(H)
Cat H 2502

$12.50

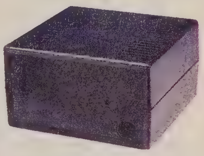
95 x 45 x 145mm



A precision instrument case that has specially designed vents to allow the free circulation of air. Snap together design with front and back panels.
Cat H 2503

$19.95

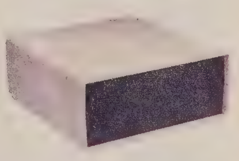
130 x 75 x 130mm



Top and bottom air vent slots make this ideal as a power supply case (or for other heat generating projects). PCB mounting slots are suitable for various sized PCBs up to 130 x 75mm. Comes with assembly screws.
Cat H 2516

$17.50

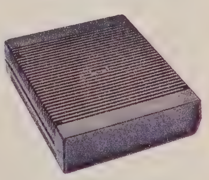
155 x 65 x 160mm



Has 16 vertical mounting slots for 145mm long PCBs (up to 55mm high) and 23 mounting points for horizontal PCBs. Top and bottom halves screw together. Includes front and back panels and screws.
Cat H 2508

$19.95

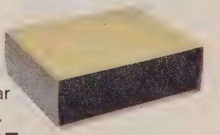
210 x 55 x 175mm



Just the right size and shape for a large range of instruments, communications equipment, etc. Has removable front and rear panels and provision for speaker at both top and bottom. Comes with assembly screws.
Cat H 2520

$17.50

200 x 65 x 160mm

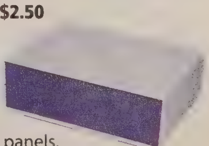


Slotted to allow many and varied PCB mounting positions. Attractive and sturdy, it's ideal for a large range of projects and instruments. Comes complete with black plastic front and rear panels, assembly screws and rubber feet.
Cat H 2505

$24.95

Blank Plastic Panel to suit Cat H 4052 **$2.50**

250 x 190 x 80mm

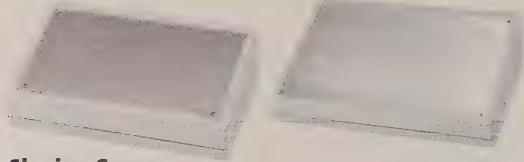


Superbly moulded and fitting instrument case which separates into two halves and has plastic front and rear panels. There are plenty of PCB mounting slots for mounting either vertically or horizontally and it comes with rubber feet and assembly screws.
Cat H 2507

$24.95

Blank front/rear panel to suit Cat H 4054 **$2.50**

Plastic Cases



Sloping Cases

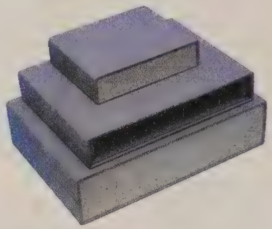
These plastic cases are ideal for audio and test equipment projects or for those larger projects requiring a sloping panel.

Small:	134 x 189 x 32 x 55mm	Cat H 2914	**NEW**	**$12.95**
Large:	189 x 134 x 32 x 55mm	Cat H 2913	**NEW**	**$14.95**

Plastic case with a 1mm thick metal panel.

Small:	190 x 120 x 36 x 65mm	Cat H 2911	**$29.95**
Large:	260 x 160 x 35 x 80mm	Cat H 2912	**$39.95**

Instrument Cases

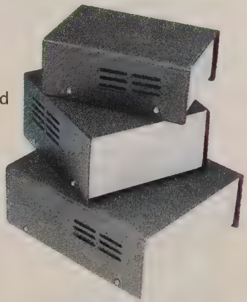


These high impact ABS plastic cases have a two part design with a tongue groove joint. They are lightly textured which affords a non-scratch surface and maintains a high quality finish. Features guide slots for vertical mounting of PCBs.

Size (mm) WxDxH	Cat No	Price
140x110x35mm	Cat H 2512	**$7.95**
225x165x40mm	Cat H 2513	**$13.95**
260x180x65mm	Cat H 2514	**$17.95**

Metal Boxes

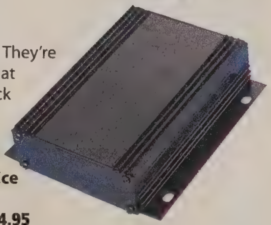
Metal Cabinets



Ideal cabinets for projects with meters and controllers which need to be mounted on the front panel. Twin 'U' shape design with metal top & sides and aluminium front/rear/base. The side panels have cooling slots.

Size (mm) LxWxH	Cat No	Price
100 x 150 x 60	Cat H 2742	**$12.95**
130 x 150 x 75	Cat H 2743	**$15.95**
160 x 185 x 70	Cat H 2744	**$17.50**

Extruded Aluminium Heatsink Boxes



Internally slotted to accept PCBs. They're an ideal choice for any project that needs heat dissipation. Their black powder-coated finish gives an ultra-professional ook to any project.

Size (mm) LxWxH	Cat No	Price
140 x 72 x 32	Cat H 3000	**$24.95**
140 x 108 x 38*	Cat H 3002	**$29.95**

*Features sliding top panel (immobile when assembled)

Diecast Aluminium Boxes

Ideal for RF projects (the lids form an effective screen) or for projects which are subject to weather (they can easily be made watertight). With channelled walls for easy PCB mounting, they're lightweight and extremely robust. Also ideal for projects involving heat as the case itself makes an excellent heatsink.

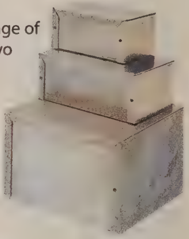
Size (mm) LxWxH	Cat No	Price
100 x 50 x 25	Cat H 2221	**$14.95**
122 x 66 x 41	Cat H 2211	**$16.95**
110 x 62 x 31	Cat H 2202	**$19.95**
120 x 94 x 57	Cat H 2204	**$24.95**
150 x 80 x 50	Cat H 2206	**$26.95**
191 x 120 x 65	Cat H 2201	**$29.95**

Aluminium Diecast Boxes

With Powder Coated 3mm-thick lid

Size (mm) LxWxH	Cat No	Price
50 x 50 x 21	Cat H 2227	**$8.95**
90 x 90 x 36	Cat H 2228	**$14.95**
125 x 125 x 53	Cat H 2229	**$18.95**

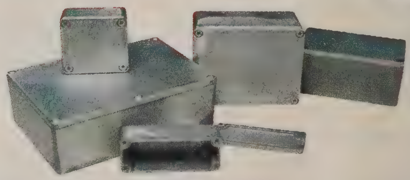
Aluminium Boxes



Economical and easy to work with! A wide range of sizes to suit just about any project. Made in two sections, they come complete with screws.

Size (mm) LxWxH	Cat No	Price
100 x 60 x 45	Cat H 2305	**$9.95**
130 x 75 x 55*	Cat H 2325	**$9.95**
125 x 100 x 75	Cat H 2320	**$12.95**
150 x 130 x 100	Cat H 2330	**$16.95**

***Limited Stocks Available**



Sealed Diecast Aluminium Boxes

Ideal for enthusiast outdoor projects that require both weatherproof and RF shielded enclosures, as well as in industrial and commercial applications. These boxes are made from corrosion-resistant diecast aluminium (ADC-10 to Japan Industrial Standard) and feature a recessed neoprene gasket to meet IP65 of IEC529 and NEMA4 (dust and hoseproof) requirements. The wall mounting holes and stainless steel lid fixing screws are also outside the sealing area to prevent the ingress of moisture. Complete with copper-plated ground screw and washer.

Size (mm) LxWxH	Cat No	Price
36 x 90 x 30	Cat H 2230	**$7.95**
64 x 58 x 35	Cat H 2231	**$9.95**
115 x 65 x 55	Cat H 2233	**$16.95**
115 x 90 x 55	Cat H 2234	**$18.95**
171 x 121 x 55	Cat H 2236	**$29.95**

Metal Boxes

Instrument Cases

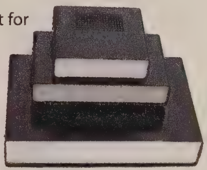
Quality Australian made K & W instrument cases. With a steel top, cover and sides plus aluminium base/front/rear. A 5mm recess on the top and sides give the front panel a professional finish. Come with either pressed dimple feet or rubber feet (depending on size).

Front Panel Size:
Length (-10mm) x Height (-5mm)
Overall Size:

Size (mm) LxDxH	Vented	Cat No	Price
100 x 77 x 130	No	Cat H 2804	**$22.50**
200 x 65 x 130	No	Cat H 2806	**$24.95**
255 x 77 x 155	Yes	Cat H 2808	**$27.50**
255 x 150 x 155	Yes	Cat H 2810	**$29.95**
305 x 90 x 200	Yes	Cat H 2812	**$34.95**
305 x 150 x 200	Yes	Cat H 2814	**$39.95**

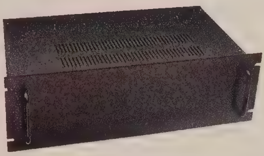
Steel Enclosures

Easy-to-assemble and conforming with the IEC297 standard, these high-quality cases are sturdy and give your projects a professional touch. They pack flat for easy storage and shipping and feature easy-to-modify aluminium front and rear panels.



Size (mm) LxDxH	Cat No	Price
203.2 x 63.5 x 177.8	Cat H 3100	**$29.95**
304.8 x 63.5 x 177.8	Cat H 3102	**$34.95**
431.8 x 88.9 x 279.4	Cat H 3110	**$64.95**

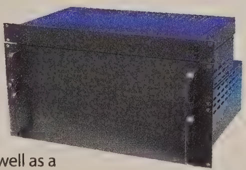
Economy 19" Rack Case



Quality black instrument case fits standard 19" racks. Supplied flat and can be assembled in minutes. Heavy gauge (3mm) aluminium front panel and slotted steel top and bottom panels. Size: 420 x 250 x 140mm.
Cat H 2481

$79

Professional 19" Rack Cases

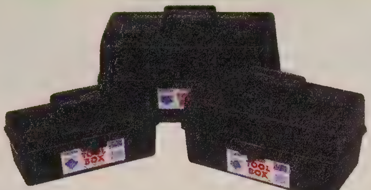


Heavy-duty steel rack cases designed and built to professional/ industrial standards, yet priced to suit the enthusiast. This series complies with IEC 297, IEA RS-310 C1977 & DIN41494 standards and are compatible with all 19" equipment. Each is supplied with an aluminium front and rear panel, as well as a spare 'unflanged' front panel which allows switches, pots, etc to be mounted so that only the shaft passes through the front panel. Eight mounting rails are supplied, ideal for installing heavy transformers independently of the cover panels, and to improve structural rigidity. These cases come packed flat for convenient shipment and storage, yet are very easy to assemble.

Description	L x H x D	Cat No.	Price
1U 19"	424 x 38 x 254mm	Cat H 2682	**$89**
2U 19"	424 x 81 x 254mm	Cat H 2684	**$109**
3U 19"	424 x 127 x 332mm	Cat H 2686	**$129**
*Spare 1U Panel		Cat H 2683	**$9.95**

*Limited Stocks Available

Storage Boxes



Tool Boxes

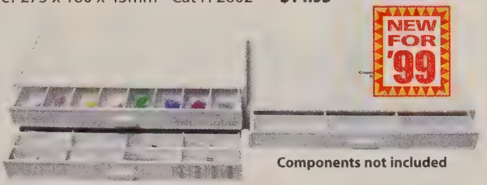
Medium Carry Tray	**NEW**	Cat H 2695	**$6.95**
1 Tray 290 x 130 x 110mm		Cat H 2593	**$12.50**
2 Tray 325 x 170 x 155mm		Cat H 2594	**$19.95**
3 Tray 390 x 195 x 195mm		Cat H 2595	**$29.95**
6 Tray Tool Box	**NEW**	Cat H 2696	**$54.75**

Component Case with Adjustable Divider

Components not included

Component storage box with up to either 18 or 21 adjustable compartments for storing components, nuts and bolts or sewing accessories.

Small:	200 x 135 x 40mm	Cat H 2603	**$9.95**
Large:	275 x 180 x 45mm	Cat H 2602	**$14.95**



Components not included

Bits & Pieces Modular Compartment Drawers

Stackable modular system means you can keep adding drawers vertically or horizontally to get the storage size you want. Stores small items in the 15 or 14 dividable compartment.

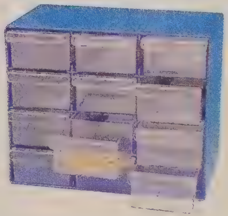
Small stackable modular 14 system	Cat H 2500	**$7.50**
Large stackable modular 15 system	Cat H 2494	**$12.50**

Virtually Unbreakable Storage Box

Keep all your tools together in this durable plastic storage box. Its small separate compartments allow you to keep different bits and pieces together while it also provides enough space to house your larger tools.
Cat H 2572

$24.95

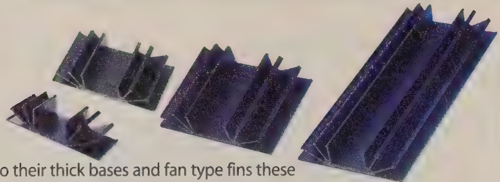
12-Drawer Parts Cabinet



This solid 12-drawer plastic cabinet provides convenient storage of components and various hardware items. Can be screwed directly onto a wall. Size approx. 230mm x 128mm x 188mm.
Cat H 2582

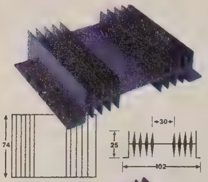
$19.95

Also available:
20-Drawer Cat H 2587 **$34.95**



Due to their thick bases and fan type fins these heatsinks can dissipate massive amounts of heat. Available in various lengths.

Cat No.	Length	Thermal Resistance	Price (ea)
H 3423	35mm	2.8°C/W	**$5.95**
H 3424	52mm	2.5°C/W	**$7.95**
H 3422	75mm	2.2°C/W	**$9.95**
H 3426	225mm	1.0°C/W	**$19.95**



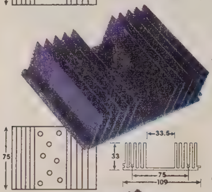
Economy Power Heatsink

Available either undrilled or pre-drilled. Accepts TO-3, TO-26, TO-220 etc.

H 3470 Undrilled
H 3471 Predrilled (2 x TO-3) ***Limited stock***

Thermal Resistance: 2.8°C/W

$8.95



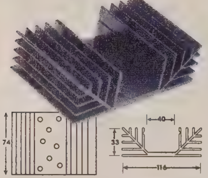
Versatile Heavy Duty Power Heatsink

This ingenious design allows flat horizontal and vertical mounting.

H 3460 Undrilled
H 3461 Predrilled (2 x TO-3) ***Limited stock***

Thermal Resistance: 2°C/W

$9.95



Radial Fin Power Heatsink

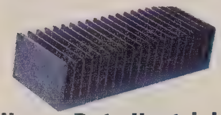
The design of this heatsink makes it ideal for efficient heat dissipation over a small area.

Pre-drilled (2 x TO-3)

Thermal Resistance: 1.9°C/W.

H 3485

$12.95

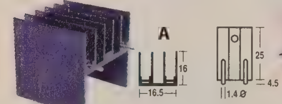


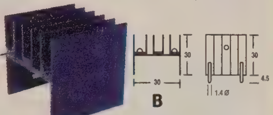
75mm wide

Heavy Duty Heatsink

Ideal for power amplifier projects.

Cat No.	Length	Thermal Resistance	Price (ea)
H 3406	200mm	0.59°C/W	**$22.50**
H 3408	300mm	0.40°C/W	**$29.95**

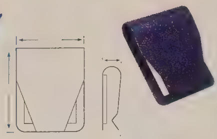




PCB Mount Heatsink

Designed to be soldered directly to the tracks with the fins mounted vertically for maximum efficiency. Pre-drilled to take a single flat-pack semiconductor.

Cat No.	Thermal Resistance	Price (ea)
A. H 3490	18°C/W	**$3.95**
B. H 3495	10°C/W	**$5.95**

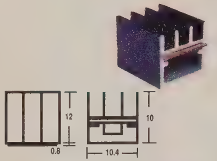


Snap-on TO-220 Cooler Heatsink

Snap-on heatsink to suit TO-220 type transistors, they simply snap over the transistor. Install in seconds.

Thermal Resistance 32°C/W. **$2.50**

H 3416

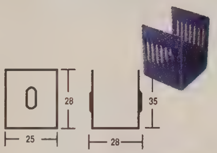


Snap-on TO-126 Cooler Heatsink

Snap-on heatsinks to suit TO-126 type plastic power transistors. Simply snap over the transistor. Install in seconds.

Thermal resistance 55°C/W. **$2.50**

H 3417

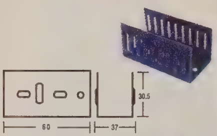


Universal Mini U Heatsink

Suits virtually all flat (plastic type) semiconductors so it's used extensively on PCBs. Vertical flutes provide good thermal efficiency.

Thermal resistance 12°C/W. **$2.50**

H 3402

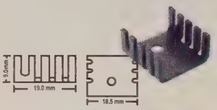


Universal Semi U Heatsink

The universal hole pattern allows for mounting of virtually all 'power' type semiconductors.

Thermal resistance 8°C/W. **$2.95**

H 3401

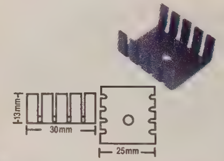


Micro U Heatsink

To suit TO-220 or TO-126 transistors. Constructed from anodised aluminium.

Thermal resistance 28°C/W. **$1.45**

H 3403

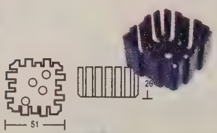


Mini U Heatsink

To suit TO-220 or TO-126 transistors. Constructed from anodised aluminium, it's small size ensures it will fit into the tightest places.

Thermal resistance 19° C/W. **$2.25**

H 3404



TO-3 Powerfin Heatsink

The unique fin design gives a very high air-to-metal ratio, giving maximum heat dissipation in a very small space.

Thermal resistance 5°C/W. **$4.45**

H 3400

Economy Heat Transfer Compound

Silicon-based compound for thermo coupling of electronic components and heatsinks. High-heat conductive property allows heat to pass freely where heat dissipation and dispersion is important.
10g tube.

$5.95

N 1205

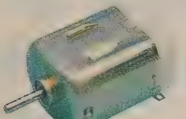
Heat Transfer Compound

Non-silicon compound for reliable and efficient dissipation of heat. Should be applied to base and mounting studs of components, thermostats and heatsinks.
10ml/20gm syringe.

$12.95

N 1200

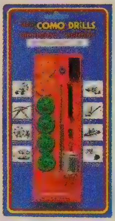
Motors and Gears



Low Speed/Low Torque

Voltage Range: 3-12V
Nominal Voltage: 3V
Speed (no load): 3600 RPM
Current (no load): 0.07A
Torque@ Max Efficiency: 3.07g-cm
Body Size: 20mm diam.) x 25mm (long)
Shaft Size: 8.1mm (long) x 2mm (diam)
Cat P 9000

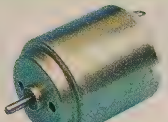
$2.50



Gearbox With Motor

Ideal for experimental projects and for building into models such as vehicles, cranes, robots etc. It operates on 1.5, 3.0 or 4.5 volt DC, requiring either a battery or transformer. Provides 6 different ratios and 18 different speeds. Output shaft: 3mm diam.
Cat P 9020

$24.95



Medium Speed/ Medium Torque

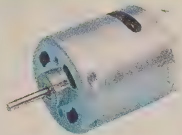
Voltage Range: 1.5-3V
Nominal Voltage: 3V
Speed (no load): 13,800 RPM
Current (no load): 0.35A
Torque @ Max Efficiency: 18.6g-cm
Body Size: 23.6mm diam. x 28.5mm (long)
Shaft Size: 6.5mm (long) x 2mm (diam)
Cat P 9002

$3.50

Nylon Gears Pack of 18

Worm, Spindle, Reduction, Spur, Drive etc. Suit P-9000 and P-9002 DC Motors.
Cat P 9040

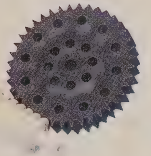
$5.95pk



High Speed/ High Torque

Voltage Range: 6-12V
Nominal Voltage: 12V
Speed (no load): 18,400 RPM
Current (no load): 0.30A
Torque@ Max Efficiency: 69.2g-cm
Body Size: 27.5mm diam. x 32.6mm (long)
Shaft Size: 12mm (long) x 2.3mm (diam)
Cat P 9004

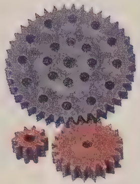
$6.95



Worm Gear

Changes motion from one direction to another at right angles.
Cat P 9034

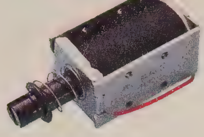
$9.95



Spur Gear

Used for further reduction in speed.
Cat P 9032

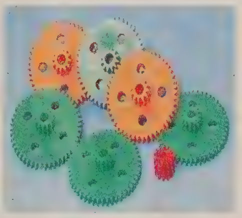
$10.95



6V DC 900mA – 12V DC 1.8A Solenoid

Great for hobbyists and experimenters. Make your own electrically operated door/gate lock. Size: 47.5 (L) x 29 (W) x 26.4 (H).
Cat P 9010

$19.95

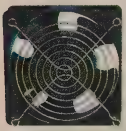


Gear Set

Replacement or spares, set of 7.
Cat P 9030

$14.95

Fans

A


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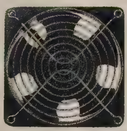

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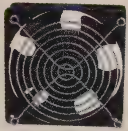

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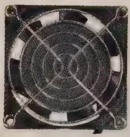

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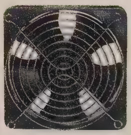

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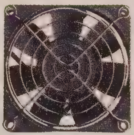

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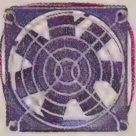
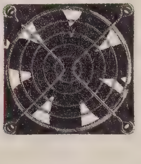
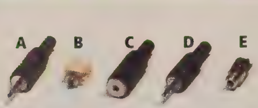


H


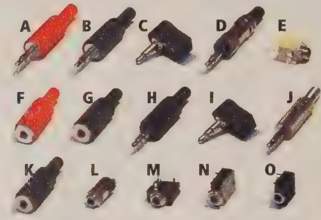
Size	Voltage	Current	Speed	Static Pressure	Noise	Bearing Type	Cat No	Price
A. 120x120x38mm	240V AC	0.125 AMP	2550 RPM, 85 CFM	0.25 Inch-H20	43 dBA	Sleeve	Y 8500	**$34.95**
B. 120x120x38mm	240V AC	0.125 AMP	2750 RPM, 87 CFM	0.26 Inch-H20	45 dBA	Ball	Y 8490	**$34.95**
C. 80x80x25mm	240V AC	0.07 AMP	2300 RPM, 17 CFM	0.12 Inch-H20	29 dBA	Sleeve	Y 8505	**$32.95**
D. 80x80x25mm	240V AC	0.07 AMP	2450 RPM, 18 CFM	0.13 Inch-H20	30 dBA	Ball	Y 8495	**$33.95**
E. 120x120x38mm	12V DC	0.57 AMP	3000 RPM, 107 CFM	0.30 Inch-H20	41 dBA	Sleeve	Y 8509	**$32.95**
F. 120x120x38mm	12V DC	0.57 AMP	3100 RPM, 108 CFM	0.31 Inch-H20	42 dBA	Ball	Y 8499	**$34.95**
G. 80x80x25mm	12V DC	0.22 AMP	3000 RPM, 41.7 CFM	0.18 Inch-H20	34 dBA	Sleeve	Y 8507	**$32.95**
H. 80x80x25mm	12V DC	0.22 AMP	3200 RPM, 42.5 CFM	0.23 Inch-H20	36.5 dBA	Ball	Y 8497	**$34.50**

All fans include chrome finger guard



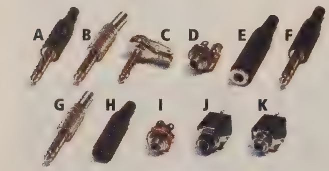
2.5mm Phono Plugs & Sockets

A	Mono Plug Plastic In-line	P 1125	$1.15
B	Mono Socket Panel	P 1220	$1.15
C	Mono Socket Plastic In-line	P 1232	$1.95
D	Stereo Plug Plastic In-line	P 1127	$2.45
E	Stereo Socket Panel Tubular	P 1222	$1.95



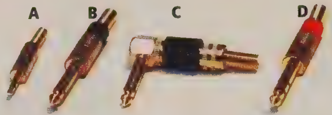
3.5mm Phono Plugs & Sockets

A	Mono Plug Red Plastic	P 1132	$1.15
B	Mono Plug Black Plastic	P 1134	$1.15
C	Mono Plug Black Plastic Right Angle	P 9098	$1.30
D	Mono Plug Nickel	P 1136	$2.10
E	Mono Socket Panel Mount	P 1231	$1.70
F	Mono Socket Red Plastic In-line	P 1234	$2.10
G	Mono Socket Black Plastic In-line	P 1236	$2.10
H	Stereo Plug Black Plastic	P 1140	$1.60
I	Stereo Plug Plastic Right Angle	P 9099	$2.10
J	Stereo Plug Nickel	P 1145	$2.50
K	Stereo Socket Black Plastic Inline	P 1238	$2.50
L	Stereo Socket Tubular Panel Mount	P 1240	$2.65
M	Stereo Socket SPST PCB/Chassis Mount	P 1245	$2.10
N	Stereo Socket DPST PCB/Chassis Mount	P 1247	$2.75
O	Stereo Socket PCB Mount	P 9124	$1.75



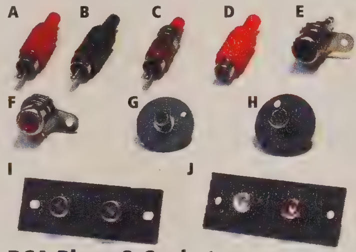
6.5mm Phono Plugs & Sockets

A	Mono Plug Black Plastic	P 1160	$2.25
B	Mono Plug Nickel	P 1162	$2.75
C	Mono Plug Nickel Right Angle	P 1170	$2.75
D	Mono Socket SPST Panel Mount	P 1261	$2.75
E	Mono Socket Plastic In-line	P 1264	$2.25
F	Stereo Plug Black Plastic	P 1166	$2.25
G	Stereo Plug Nickel	P 1168	$2.75
H	Stereo Socket Plastic In-line	P 1286	$2.25
I	Stereo Socket Panel Mount Open	P 1266	$2.95
J	Stereo Socket DPST Enclosed Panel Mount	P 1296	$2.50
K	Stereo Socket DPST Enclosed Metal Panel Mount	P 1298	$2.60



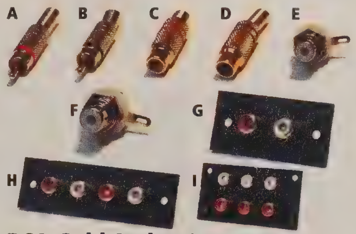
Gold Phono Plugs & Sockets

A	Plug 3.5mm Stereo Gold Phono	P 1147	$3.75
B	Plug 6.5mm Mono Gold Series	P 1163	$3.95
C	Plug 6.5mm R/A Mono Gold Solid	P 1164	$5.95
D	Plug 6.5mm Stereo Gold Series	P 1167	$3.95



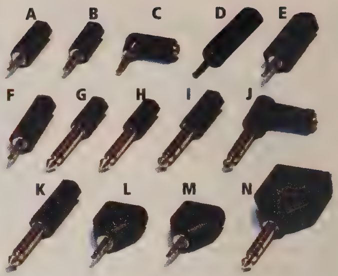
RCA Plugs & Sockets

A	Plug Red Plastic Hex Shell	P 1420	$1.25
	Plug White Plastic Hex Shell	P 1421	$1.25
	Plug Black Plastic Hex Shell	P 1422	$1.25
	Plug Yellow Plastic Hex Shell	P 1423	$1.25
B	Plug Black Solderless	P 9827	$1.55
	Plug Red Solderless	P 9828	$1.55
C	Plug Metal Red	P 1424	$2.50
	Plug Metal Black	P 1426	$2.50
D	Socket Line Red Plastic	P 1410	$1.25
	Socket Line Red Plastic	P 1412	$1.25
E	Socket Bulkhead Hole Mounting	P 1430	$1.95
F	Socket Bulkhead Mount Red	P 1433	$1.95
G	Socket Panel Bakelite Round	P 1440	$1.55
H	Socket Panel Round Term Board	P 1441	$1.75
I	Socket 2-Way Nickel 20x55mm	P 1442	$2.25
J	Socket 2-Way Nickel 22x56mm	P 1443	$2.50



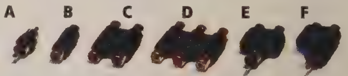
RCA Gold Series Connectors

A	Plug RCA Metal Red Gold Series	P 1425	$2.95
B	Plug RCA Metal Black Gold Series	P 1427	$2.95
C	Skt RCA Line Red Gold Series	P 1411	$2.95
D	Skt RCA Line Black Gold Series	P 1413	$2.95
E	Skt RCA Bulkhead Mount Red Gold	P 1431	$5.95
F	Skt RCA Bulkhead Mount Black Gold	P 1432	$5.95
G	Socket 2-Way Gold 22x56mm	P 1450	$4.95
H	Socket 4-Way Gold 24.4x76mm	P 1453	$5.95
I	Socket 6-Way Gold 50x48mm	P 1454	$6.95



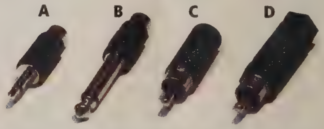
Audio Adaptors – Phono

A	2.5mm Mono Plug – 3.5mm Stereo Socket	P 6515	$4.95
B	3.5mm Mono Plug – 3.5mm Stereo Socket	P 6600	$4.95
C	3.5mm Stereo Plug – 3.5mm Stereo Socket R/A	P 6620	$6.95
D	3.5mm Mono Plug – 6.5mm Mono Socket	P 6510	$4.95
E	3.5mm Mono Plug – 6.5mm Stereo Socket	P 6570	$4.95
F	3.5mm Stereo Plug – 6.5mm Stereo Socket	P 6505	$4.95
G	6.5mm Mono Plug – 3.5mm Mono Socket	P 6520	$4.95
H	6.5mm Mono Plug – 3.5mm Stereo Socket	P 6502	$4.95
I	6.5mm Stereo Plug – 3.5mm Stereo Socket	P 6500	$4.95
J	6.5mm Stereo Plug – 3.5mm Stereo Socket R/A	P 6625	$6.95
K	6.5mm Mono Plug – 6.5mm Stereo Socket	P 6580	$4.95
L	3.5mm Mono Plug – 2x3.5mm Stereo Socket	P 6527	$4.95
M	3.5mm Stereo Plug – 2x3.5mm Stereo Socket	P 6525	$6.95
N	6.5mm Stereo Plug – 2x6.5mm Stereo Socket	P 6581	$9.95



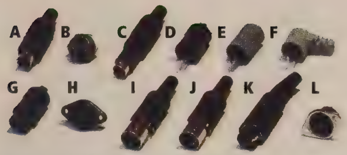
Audio Adaptors – RCA

A	1 x RCA Plug – 1 x RCA Plug	P 6614	$4.95
B	1 x RCA Socket – 1 x RCA Socket	P 6565	$4.95
C	2 x RCA Socket – 2 x RCA Socket	P 6567	$9.95
D	3 x RCA Socket – 3 x RCA Socket	P 6568	$12.95
E	1 x RCA Plug – 2 x RCA Sockets	P 6610	$6.95
F	1 x RCA Plug – 2 x RCA Socket Gold	P 6612	$9.95



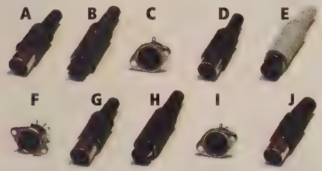
Audio Adaptors – Phono to RCA

A	3.5mm Mono Plug – RCA Socket	P 6560	$4.95
B	6.5mm Mono Plug – RCA Socket	P 6530	$4.95
C	RCA Plug – 3.5mm Mono Socket	P 6540	$4.95
D	RCA Plug – 6.5mm Mono Socket	P 6550	$4.95

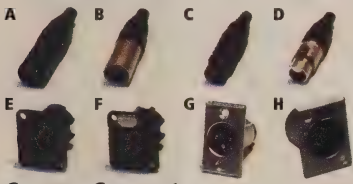


DIN Connectors

A	Plug 4-Pin Mini DIN S-VHS	P 1482	$3.75
B	Socket 4-Pin Mini DIN Panel Mount	P 1500	$4.50
C	Plug 6-Pin Mini DIN PS/2	P 1492	$3.75
D	Plug 2-Pin DIN Line Solder	P 1520	$2.25
E	Plug 2-Pin DIN Screw Terminals	P 9140	$2.40
F	Plug 2-Pin DIN Right Angle Solderless	P 9142	$2.50
G	Socket 2-Pin DIN Line Solder	P 1524	$1.75
H	Socket 2-Pin DIN Panel Mount Solder	P 1523	$1.50
I	Plug 3-Pin DIN Line Solder	P 1530	$1.70
J	Plug 5-Pin DIN Line 180° Solder	P 1550	$2.25
K	Socket 5-Pin DIN Line 180° Solder	P 1554	$2.10
L	Socket 5-Pin DIN Panel 180° Solder	P 1552	$2.95



A	Plug 6-Pin DIN Line Solder	P 1560	$2.55
B	Socket 6-Pin DIN Line Solder	P 1564	$2.55
C	Socket 6-Pin DIN Panel Solder	P 1562	$2.55
D	Plug 7-Pin DIN Line Solder	P 1561	$2.55
E	Socket 7-Pin DIN Line Solder	P 1563	$2.55
F	Socket 7-Pin DIN Panel Solder	P 1565	$2.55
G	Plug 8-Pin DIN Line Solder	P 1571	$2.75
H	Socket 8-Pin DIN Line Solder	P 1573	$2.75
I	Socket 8-Pin DIN Panel Solder	P 1575	$2.75
J	Plug 13-Pin DIN Line Solder	P 1569	$2.75



Cannon Connectors

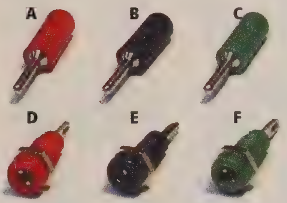
A	Plug Line Plastic (AC3MCP)	P 1609	$4.95
B	Plug Line Metal (AC3M)	P 1623	$6.95
C	Socket Line Plastic (AC3FCP)	P 1612	$4.95
D	Socket Line Metal (AC3F)	P 1621	$6.95
E	Plug Panel Mnt Plastic with Latch (AC3MDPV)	P 1610	$4.95
F	Plug Panel Mount Metal (AC3MPNZ)	P 1622	$9.95
G	Socket Panel Mnt Plastic with Latch (AC3FDPV)	P 1611	$5.95
H	Socket Panel Mount Metal (AC3FPZ)	P 1626	$9.95

Cannon Connectors (IDC)

A	Plug Line IDC Metal (AC3MI)	P 1607	$7.95
B	Socket Line	P 1608	$7.95

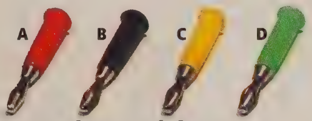
Automotive Connectors

A	Plug Car Lighter Acc Plain Std	P 1675	$2.75
B	Plug Cig Lighter + 5A Fuse and LED	P 1684	$4.45
C	Socket Car Lighter External Line	P 1677	$2.95
D	Socket Car 12V/24V Chassis Mount	P 1690	$4.95
E	Socket Lighter 12V Illum Panel Mount (includes lighter plug)	P 1679	$7.95
F	Socket Twin Lighter (5 Amps/Side)	P 1678	$9.95
G	Socket Adjustable Angle Plug Dbl Lighter	P 1686	$12.95
H	Lead 2m Cig Star Adaptor 1A	P 1682	$9.95
I	Lead 2.8m Ext Cig Skt + Cover	P 1681	$13.95
	Cig Extension Lead 4m with DC Plug Set	P 1683	$16.95



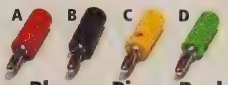
Micro Connectors – 2mm

A	Plug Test Pin/Probe Red	P 1752	$1.25
B	Plug Test Pin/Probe Black	P 1750	$1.25
C	Plug Test Pin/Probe Green	P 1749	$1.25
D	Skt Test Pin/Probe Panel Red	P 1758	$1.95
E	Skt Test Pin/Probe Panel Black	P 1756	$1.95
F	Skt Test Pin/Probe Panel Green	P 1757	$1.95



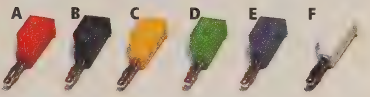
Banana Plugs – Plain

A	Red	P 1710	$1.25
B	Black	P 1712	$1.25
C	Yellow	P 1714	$1.25
D	Green	P 1716	$1.25



Banana Plugs – Piggy Back

A	Red	P 1740	$2.15
B	Black	P 1741	$2.15
C	Yellow	P 1742	$2.15
D	Green	P 1743	$2.15



Banana Plugs – High Quality Piggy Back

A	Red	P 1711	$2.45
B	Black	P 1713	$2.45
C	Yellow	P 1715	$2.45
D	Green	P 1717	$2.45
E	Blue	P 1718	$2.45
F	White	P 1719	$2.45

Banana Sockets – Plain

A	Red	P 1720	$1.20
B	Black	P 1722	$1.20
C	Yellow	P 1724	$1.20
D	Green	P 1726	$1.20

Banana Sockets with Binding Post

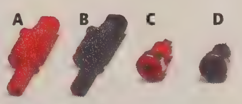
A	Red	P 1730	$2.25
B	Black	P 1732	$2.25
C	Yellow	P 1734	$2.25
D	Green	P 1736	$2.25

Sockets with Large Binding Post

A	Red	P 1731	$3.25
B	Black	P 1733	$3.25

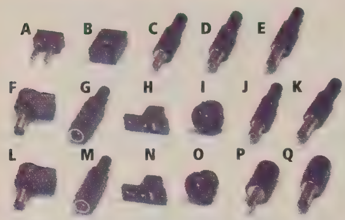
Sockets with High Quality Binding Posts

C	Red	P 1737	$3.25
D	Black	P 1738	$3.25



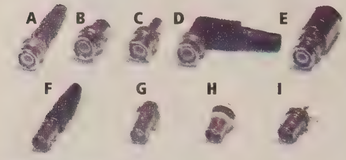
Safety Banana Connectors

A	Plug Safety P/Back Red	P 1700	$2.50
B	Plug Safety P/Back Black	P 1702	$2.50
C	Socket Safety Red	P 1728	$1.95
D	Socket Safety Black	P 1729	$1.95



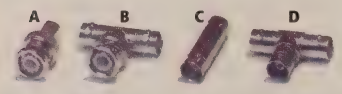
DC Connectors and Adaptors

A	Plug 2-Pin Low Voltage Non Polarised	P 3105	**$1.95**
B	Socket 2-Pin Low Voltage Non-Polarised	P 3106	**$1.95**
C	1.3mm Plug	P 1643	**$2.25**
D	2.1mm Plug Short Shaft	P 1641	**$2.25**
E	2.1mm Plug Long Shaft	P 1642	**$2.45**
F	2.1mm Plug Right Angle	P 9200	**$2.45**
G	2.1mm Socket Line Cable Relief	P 1653	**$2.45**
H	2.1mm Socket Panel Mount	P 1661	**$1.50**
I	2.1mm Socket Round Panel Switch	P 1648	**$2.95**
J	2.5mm Plug Short Shaft	P 1645	**$2.50**
K	2.5mm Plug Long Shaft	P 1646	**$2.50**
L	2.5mm Plug Right Angle	P 9201	**$2.50**
M	2.5mm Socket Line Cable Relief	P 1655	**$2.75**
N	2.5mm Socket Panel Mount	P 1666	**$1.50**
O	2.5mm Socket Round Panel Switch	P 1650	**$2.95**
P	2.1mm Socket – 1.3mm Plug	P 6591	**$3.50**
Q	2.5mm DC Plug – 3.5mm Mono Socket	P 6595	**$3.50**



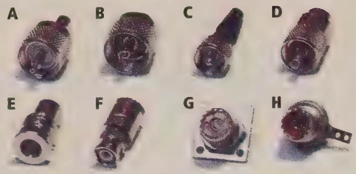
BNC Connectors

A	Plug Line Screw, to suit RG58	P 2212	**$4.95**
B	Plug Line Solder, to suit RG58	P 2210	**$5.95**
C	Plug Line Crimp, to suit RG58	P 2211	**$5.95**
D	Plug Line R/Angle Solderless for RG58	P 2213	**$7.40**
E	Plug Line Solder, to suit RG8/RG213	P 2260	**$7.40**
F	Socket Line Solderless	P 2225	**$3.95**
G	Socket Line, Solder	P 2223	**$7.40**
H	Socket Panel, Isolated Ground	P 2215	**$4.95**
I	Socket Panel, Common Ground	P 2220	**$4.95**



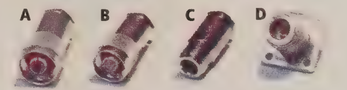
BNC Joiners

A	50 Ohm Male Terminator	P 2280	**$5.95**
B	Adaptor 'T' Male – 2 x Female	P 2277	**$5.95**
C	Adaptor 'I' Female – Female	P 2265	**$5.95**
D	Adaptor 'T' Female – 2 x Female	P 2275	**$5.95**



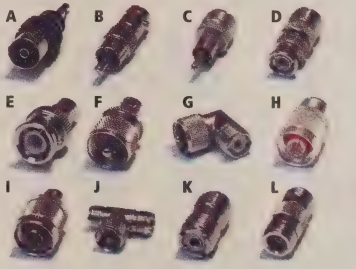
UHF Coax Connectors

A	PL259 Line Plug Crimp, suits RG58	P 2313	**$4.45**
B	PL259 Line Plug Solder, suits RG58 cable	P 2311	**$4.95**
C	PL259 Line Plug Solderless	P 2315	**$5.95**
D	PL259 Line Plug Solder, suits RG8 cable	P 2310	**$5.95**
E	Cable Reducing Adaptor for P-2310	P 2360	**$1.95**
F	SO239 Line Socket, suits RG58 cable	P 2320	**$5.95**
G	SO239 Panel Socket, Flange Mount	P 2340	**$4.95**
H	SO239 Panel Socket, Hole Mount	P 2342	**$4.95**



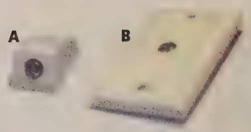
N Connectors (Silver Plated)

A	Line Plug to suit RG213	P 2400	**$9.95**
B	Line Plug to suit RG58	P 2401	**$11.95**
C	Socket Line to suit RG213	P 2413	**$7.95**
D	Socket Panel Mount	P 2410	**$7.45**



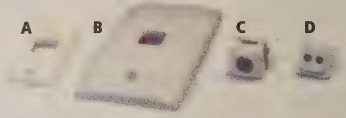
Adaptors – Video/RF

A	3.5mm Mono Plug – 75ohm Coax Skt	P 2035	**$3.75**
B	RCA Plug – BNC Socket	P 2255	**$5.95**
C	RCA Plug – UHF SO239 Socket	P 1455	**$4.95**
D	BNC Plug – UHF SO239 Socket	P 2230	**$5.95**
E	BNC Plug – RCA Socket	P 2250	**$5.95**
F	UHF PL259 Plug – BNC Socket	P 2240	**$5.95**
G	UHF PL259 Plug – SO239 Socket R/Angle	P 2382	**$6.95**
H	N Plug – SO239 Socket Silver	P 2415	**$9.95**
I	N Plug – BNC Socket Nickel	P 2417	**$9.95**
J	Adaptor 'T' PL259 Plug 2 x SO239 Socket	P 2384	**$9.95**
K	SO239 Socket – SO239 Socket Joiner	P 2380	**$4.95**
L	N Socket – N Skt Joiner Silver	P 2420	**$6.95**



Wall Sockets – 75 Ohm

A	Surface Mount Plate with Coax Socket	P 2044	**$5.95**
B	Wall Plate with Coax Socket/Splitter	P 2042	**$6.45**

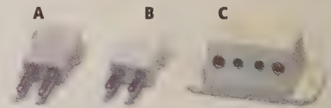


Wall Plates

A	Architrave Plate	P 2051	**$3.95**
B	Large Plate	P 2053	**$4.95**

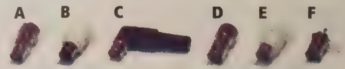
Insert for Wall Plates

C	75 Ohm Insert for P 2051/P 2053	P 2054	**$3.75**
D	Skt 300 Ohm Insert for P 2051/P 2053	P 2056	**$3.75**



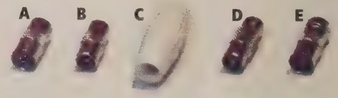
300 Ohm Connectors

A	Line Plug Solder/Crimp	P 2082	**$2.95**
B	Line Plug Screw Terminals	P 2084	**$2.95**
C	Surface Mount Wall Socket	P 2081	**$3.45**



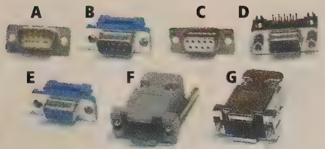
75 Ohm Connectors

A	Plug Line Metal Solderless	P 2020	**$2.75**
B	Plug Line Plastic Solderless	P 2021	**$2.25**
C	Plug R/Angle Solderless	P 2024	**$2.80**
D	Socket Line Metal Solderless	P 2030	**$2.75**
E	Socket Line Plastic Solderless	P 2031	**$2.25**
F	Socket Panel, Hole Mount	P 2046	**$2.50**



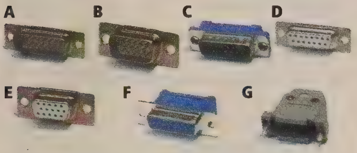
Coax In-Line Joiners

A	Adaptor Female – Female	P 2070	**$3.20**
B	Adaptor Male – Male	P 2072	**$3.20**
C	Cable Joiner Solderless	P 2075	**$3.20**
D	Plug Coax to F Type Socket	P 2036	**$3.50**
E	Plug F Type to 75ohm Coax Skt	P 2037	**$4.20**



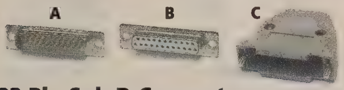
9 Pin Sub D Connectors

A	Plug Solder Tail	P 2684	$2.25
B	Plug IDC Flat Ribbon	P 2699	$6.95
C	Socket Solder Tail	P 2685	$2.25
D	Socket Right Angle PCB Mount	P 2683	$3.95
E	Socket IDC Flat Ribbon	P 2700	$6.95
F	Plastic Backshell with Thumbscrews	P 2686	$3.25
G	Chrome Backshell	P 9892	$3.95



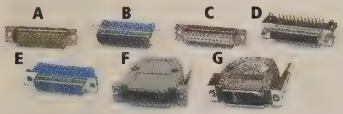
15 Pin Sub D Connectors

A	Plug Solder Tail	P 2687	$2.95
B	Plug High Density VGA	P 2710	$3.95
C	Plug IDC Flat Ribbon	P 2701	$6.95
D	Socket Solder Tail	P 2688	$2.95
E	Socket High Density VGA	P 2711	$3.95
F	Socket IDC Flat Ribbon	P 2702	$6.95
G	Plastic Backshell	P 2689	$2.95



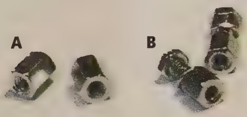
23 Pin Sub D Connectors

A	Plug Solder Tail	P 2696	$3.95
B	Socket Solder Tail	P 2697	$3.95
C	Plastic Backshell	P 2698	$3.25



25 Pin Sub D Connectors

A	Plug Solder Tail	P 2690	$4.20
B	Plug IDC Flat Ribbon	P 2693	$6.95
C	Socket Solder Tail	P 2691	$4.20
D	Socket Right Angle PCB Mount	P 2695	$4.95
E	Socket IDC Flat Ribbon	P 2694	$6.95
F	Plastic Backshell with Thumbscrews	P 2692	$4.20
G	Chrome Backshell	P 9894	$4.20

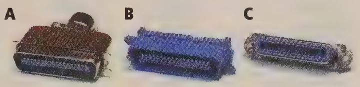


Sub D Accessories

A	Hex Extension Nuts Pk of 2	P 2724	$0.50
B	Hex Screw sockets Pk of 2	P 2725	$1.25

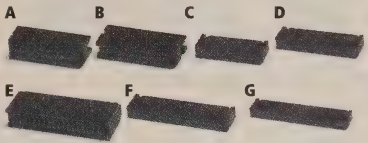
Computer Power Connectors

Disk Drive Power Plug & Socket	P 5120	$3.45



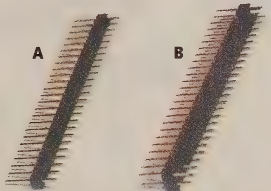
36 Way Centronics

A	Plug Line	P 2680	$4.95
B	Plug IDC	P 2678	$6.95
C	Socket Panel Mount	P 2681	$4.95



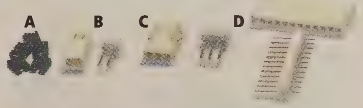
IDC Sockets

A	16 Way D.I.L. IDC Socket	P 2744	$3.25
B	20 Way D.I.L. IDC Socket	P 2746	$3.25
C	26 Way D.I.L. IDC Socket	P 2748	$3.25
D	34 Way D.I.L. IDC Socket	P 2750	$3.25
E	34 Way IDC Edge Card Connector	P 2760	$3.25
F	40 Way D.I.L. IDC Socket	P 2752	$3.95
G	50 Way D.I.L. IDC Socket	P 2754	$5.95



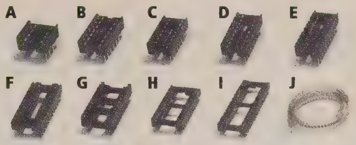
Snap Off Pin Headers

A	25 Way SIL Snap Off	P 2726	$1.50
B	50 Way (25x2) DIL Snap Off	P 2728	$2.95



Locking Pin/Plug Headers

A	Jumper Shunts Gold Pack of 5	P 2730	$1.50
B	2-Way SIL Pin Header & Plug	P 2731	$2.25
C	3-Way SIL Pin Header & Plug	P 2733	$2.35
D	12-Way SIL Pin Header & Plug	P 2735	$3.95



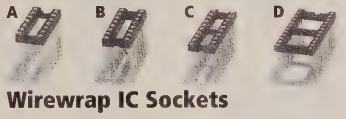
IC Sockets Dual Wipe Contacts

A	8 Pin DIL Socket	P 4080	$0.50
B	14 Pin DIL Socket	P 4140	$0.70
C	16 Pin DIL Socket	P 4160	$0.80
D	18 Pin DIL Socket	P 4180	$0.90
E	20 Pin DIL Socket	P 4200	$1.00
F	22 Pin DIL Socket	P 4220	$1.10
G	24 Pin DIL Socket	P 4240	$1.20
H	28 Pin DIL Socket	P 4245	$1.30
I	40 Pin DIL Socket	P 4250	$1.70
J	*IC Socket Kit Pack of 100 Pins	P 4504	$0.95

*Limited Stocks Available

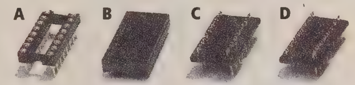
Premium Quality Machined Pin IC Sockets

A	8 Pin Socket Machined	P 4081	$1.75
B	14 Pin Socket Machined	P 4141	$1.95
C	16 Pin Socket Machined	P 4161	$2.25
D	24 Pin Socket Machined Low Profile	P 4170	$2.25
E	32 Pin Snap Off IC Socket Strip	P 4300	$5.95



Wirewrap IC Sockets

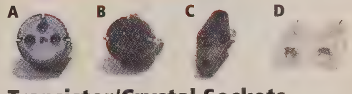
A	14 Pin DIL Socket	P 4260	$2.75
B	16 Pin DIL Socket	P 4262	$3.95
C	20 Pin DIL Socket	P 4264	$4.75
D	24 Pin DIL Socket	P 4268	$5.50



IC Plugs/Component Headers

A	*Header Plug 16 Pin DIL IDC	P 4162	$0.95
B	*Header Plug 24 Pin DIL IDC	P 4242	$0.95
C	Component Header Plug 14 Pin DIL	P 4144	$3.95
D	Component Header Plug 16 Pin DIL	P 4164	$3.95

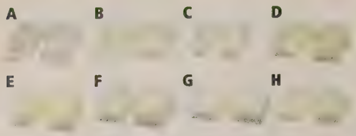
*Limited Stocks Available



Transistor/Crystal Sockets

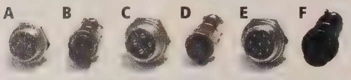
A	*TO-5 Socket	P 4015	$0.95
B	*TO-18 Socket	P 4018	$0.95
C	*TO-3 Socket	P 4023	$0.95
D	*Crystal Socket Type K Small	P 4720	$0.95

*Limited Stocks Available



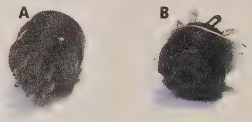
Nylon Plugs & Sockets

A	2-Way Nylon Plug & Socket	P 5102	**$3.50**
B	3-Way Nylon Plug & Socket	P 5103	**$3.75**
C	4-Way Nylon Plug & Socket	P 5105	**$3.95**
D	6-Way Nylon Pug & Socket	P 5106	**$4.95**
E	9-Way Nylon Plug & Socket	P 5109	**$5.45**
F	12-Way Nylon Plug & Socket	P 5112	**$5.95**
G	15-Way Nylon Plug & Socket	P 5115	**$6.25**
H	Spare Pins to suit, pack of 6 Male & 6 Female	P 5100	**$3.95**



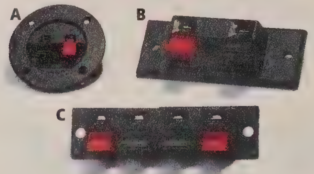
Microphone Plugs & Sockets

A	Plug 2-Pin Panel Mount	P 1820	**$3.95**
B	Socket 2-Pin Line	P 1832	**$4.75**
C	Plug 4-Pin Panel Mount	P 1824	**$3.95**
D	Socket 4-Pin Line	P 1834	**$5.95**
E	Plug 8-Pin Panel Mount	P 1826	**$7.95**
F	Socket 8-Pin Line	P 1836	**$7.95**



Octal Valve Connections

A	8-Pin Line	P 3010	**$5.95**
B	8-Pin Chassis Mount	P 3025	**$4.95**



Spring Loaded Speaker Terminals

A	2-Way Round	P 1763	**$2.95**
B	2-Way Rectangular	P 1764	**$2.95**
C	4-Way Rectangular	P 1765	**$4.95**

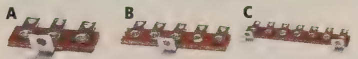
Gold Monster Twist Connectors

The perfect termination for speaker cable. No soldering required, simply screws on.

Cat P 9250

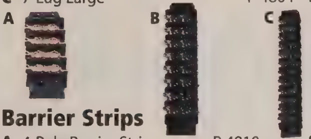
$11.95 pair

Terminal Blocks



Tag Strips

A	3-Lug Large	P 4800	**$1.75**
B	5-Lug Large	P 4802	**$1.95**
C	7-Lug Large	P 4804	**$2.25**



Barrier Strips

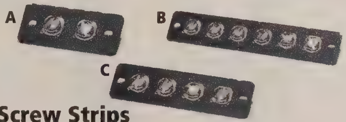
A	4-Pole Barrier Strip	P 4810	**$5.75**
B	8-Pole Barrier Strip	P 4812	**$9.95**
C	12-Pole Barrier Strip	P 4814	**$11.95**

PCB Mount Blocks

A	2-Way 5mm LS	P 4820	**$1.95**
B	3-Way 5mm LS	P 4822	**$2.10**
C	3-Way 10mm LS	P 4834	**$2.50**

Connector Strips

A	12-Way 300V 10A Small	P 4855	**$3.25**
B	12-Way 300V 10A Large	P 4850	**$3.95**



Screw Strips

A	Screw Terminal 2-Pole Japan	P 4860	**$2.25**
B	Screw Terminal 4-Pole Japan	P 4862	**$2.75**
C	Screw Terminal 6-Pole Japan	P 4864	**$3.95**

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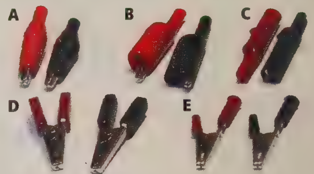
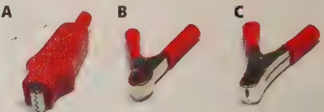
You can also visit us on the Internet
http://www.dse.co.nz

Clips



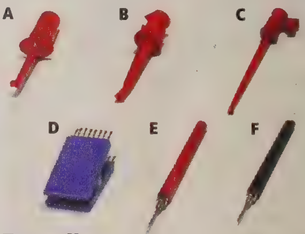
Alligator Clips

A	**Miniature Insulated**		
	Red	P 6400	**$1.55**
	Black	P 6402	**$1.55**
	Green	P 6403	**$1.55**
B	**Medium Insulated**		
	Red	P 6404	**$2.25**
	Black	P 6406	**$2.25**
C	**Alligator Clip with Banana Socket**		
	Red	P 6408	**$1.95**
	Black	P 6410	**$1.95**
D	**Crocodile Clip 34mm**		
	Red	P 9919	**$1.55**
	Black	P 9918	**$1.55**
E	**Crocodile Clip 60mm**		
	Red	P 9924	**$2.55**
	Black	P 9923	**$2.55**



Battery Clips

A	Crocodile Clip Type 20A Red	P 6416	**$3.25**
	Crocodile Clip Type 20A Black	P 6418	**$3.25**
B	Battery Clip Large 30A Red	P 6420	**$3.50**
	Battery Clip Large 30A Black	P 6422	**$3.50**
C	Car Battery Clip 50A Red	P 6424	**$3.95**
	Car Battery Clip 50A Black	P 6426	**$3.95**



Test Clips

A	Miniature IC Test Clip Red	P 6450	**$1.95**
	Miniature IC Test Clip Black	P 6452	**$1.95**
B	Medium IC Test/Hook Clip Red	P 6454	**$2.50**
	Medium IC Test/Hook Clip Black	P 6456	**$2.50**
C	Large IC Test/Hook Clip Red	P 6458	**$4.95**
	Large IC Test/Hook Clip Black	P 6460	**$4.95**
D	IC Test Clip 16 Pin Peg Style	P 6470	**$9.95**
E	Probe Test Long Solderless Red	P 1754	**$1.75**
F	Probe Test Long Solderless Black	P 1755	**$1.75**

Lamps & Lampholders

EVEREADY. Heavy-Duty Torch Globes

Standard flange fit heavy duty torch globes.

2.4 Volt @ 0.5A	Cat S 3967
3.6 Volt @ 0.5A	Cat S 3966
4.8 Volt @ 0.7A	Cat S 3965
6.0 Volt @ 0.5A	Cat S 3984

$3.25 ea

EVEREADY. Heavy Duty Screw-Type Torch Globes

Heavy-duty screw-type torch globes.

1.2V @ 0.22A	Cat S 5081
2.3V @ 0.27A	Cat S 3948
2.5V @ 0.3A	Cat S 3947
3.7V @ 0.3A	Cat S 3944
6.2V @ 0.3A	Cat S 3946

$2.65 ea

EVEREADY. Halogen Torch Globes

Stand captive fittings. Note: Hologen Bulbs operate at higher temperatures and should only be used in torches designed for their use!

2.8V @ 0.85A	Cat S 3950	**$9.95**
4.0V @ 0.85A	Cat S 3955	**$9.95**
5.5V @ 1.0A	Cat S 3960	**$12.95**

EVEREADY. Krypton Globes

Higher performance, extra bright Krypton globes to suit most torches, lanterns, etc. Standard flange fit.

2.2V @ 0.47A	Cat S 3982
2.4V @ 0.7A	Cat S 3961
3.6V @ 0.75A	Cat S 3962
4.8V @ 0.75A	Cat S 3963

$3.65 ea

MES Globe Sockets

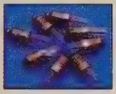
With Round flange Base & Screw Terminals.
Cat P 8161

$2.50

With Slot Mount & Solder Terminals.
Cat P 8162

$1.95

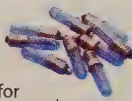
MES Tubular Globes



1.5V	300mA	P 8147
6.3V	300mA	P 8150
12V	300mA	P 8152
12V	100mA	P 8153

$1.25 ea

LES Tubular Globes



12V 50mA Long Version for P 8100 and P 8102 bezels.
Cat P 8155

$1.25 ea

12V 50mA Short Version for P 8050, 52, 54 and 56 bezels.
Cat P 8159

$1.25 ea

Wedge Globe Sockets

Wedge with right angle bracket and mini solder tags. Suit P 8157 Globes.
Cat P 8170

$1.10 ea

MBC Globe Sockets

MBC with right angle bracket and mini solder tags.
Cat P 8171

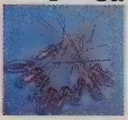
$1.75

MBC Tubular Globes

1.5V	300mA	P 8183
6.3V	300mA	P 8185
12V	300mA	P 8176
24V	50mA	P 8177

$1.25 ea

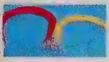
5mm "Grain of Wheat" Globe



12V 50mA with Pigtail Leads.
Cat P 8140

$1.35

3mm Mini 50mA Pilot Globes



1.5V Red Leads	P 8132	**$1.25**
3.0V Green Leads	P 8133	**$1.25**
12V Yellow Leads	P 8130	**$1.95**

3mm Mini Coloured Pilot Globes

1.5V 50mA

Red Globe	P 8120
Green Globe	P 8121
Blue Globe	P 8122
Yellow Globe	P 8123
Orange Globe	P 8124

$1.25

Mini Bi-Pin Globe

12V 60mA, suits P 7580 – P 7585 Miyama Illuminated Push Button Switches.
Cat P 8158

$3.50

Wedge Lamp

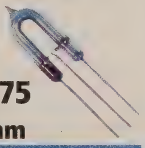
12V-14V 80mA suits P 7591 and P 7593 Illuminated Switches and P 8170 Lamp Holder.
Cat P 8157

$1.95

Xenon Flashtubes

White-light flash tubes for photoflash, timing lights, security beacons, industrial and disco strobe applications.

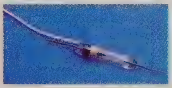
U-Type 36mm Length



200-400V (300V Nom) 60 Joules.
Cat P 8164

$5.75

Straight Type 32mm Length



200-400V (300V Nom) 0.1 Joules.
Cat P 8166

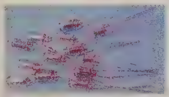
$5.45

Flashtube Trigger Transformer

250V Primary – 6kV Secondary.
Cat M 0104

$2.95

Neon Globes

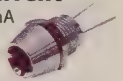


Striking Voltage: 70-90V @ 600µA. Use 240k 1/4W series resistor for 240VAC operation.
Cat P 8160

$1.25

LED Bezels

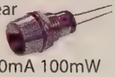
LED Bezels – Low Current



Rating:	2VDC @ 20mA
Mounting Hole:	8mm
Clearance:	16mm
Red	P 8104
Green	P 8106

$2.20 ea

LED Bezel – High Intensity



Led Lens:	Water Clear
Emitted Light:	Green
Luminous Intensity:	300mcd
Rating:	2.4VDC 20mA 100mW
Mounting Hole:	8mm
Clearance:	15mm

P 8107

$3.25 ea

LED Bezel – Dual Colour

Led Lens:	Milky White
Emitted Light:	Red and Green
Rating:	2.8VDC 20mA (max)
Mounting Hole:	7mm
Clearance:	15mm

P 8108

$5.95 ea

12V Bezels

Sub-Miniature 12V

Supplied with P 8155 LES Globe

Mounting Hole:	11mm
Clearance:	24mm
Red	P 8100
Green	P 8102

$3.75 ea

Miniature 12V

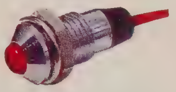
Supplied with P 8159 LES Globe.

Mounting Hole:	11mm
Clearance:	21mm
Red	P 8050
Green	P 8052
Amber	P 8054
Blue	P 8056

$2.95 ea

Neon Bezels

Subminiature Size



With flying leads for convenience.

Emitted Light:	Red
Striking Voltage:	90V

Use 270k 1/4W Series. Resistor for 240VAC.

Mounting Hole:	7mm
Clearance:	16mm

Cat P 8112

$3.50 ea

Miniature Size

240VAC with flying leads for convenience plus in-built series resistor.

Emitted Light:	Red
Mounting Hole:	4.3mm
Clearance:	49mm

Cat P 8114

$3.95 ea

Medium Size

240VAC with in-built series resistor.

Mounting Hole:	9.7mm
Clearance:	35mm

Miniature Solder Tags

Red	P 8116
Green	P 8117

$3.95 ea

Fast Blow Fuses

Fast Blow Tubular glass

M 205 20 x 5mm

100mA	P 9340	1.25Amp	P 7935
125mA	P 7939	1.6A	P 9344
200mA	P 7929	2Amp	P 7936
250mA	P 7930	2.5Amp	P 7937
315mA	P 7931	3Amp	P 9346
400mA	P 9342	3.15Amp	P 9347
500mA	P 7932	4Amp	P 9348
750mA	P 7933	5Amp	P 7938
1Amp	P 7934	10Amp	P 9354

55¢ea

Fast Blow Tubular glass

3AG 32 x 6mm

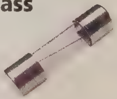
100mA	P 7950	2.5A	P 7965
150mA	P 7952	3A	P 7966
250mA	P 7954	5A	P 7968
315mA	P 7955	7.5A	P 7970
350mA	P 7956	10A	P 7972
500mA	P 7958	15A	P 7974
1A	P 7960	20A	P 7976
1.5A	P 7962	25A	P 7978
2A	P 7964	30A	P 7980
		35A	P 7982

45¢ea

Fast Blow Tubular Glass

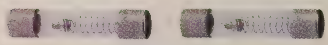
5AG 38 x 10mm

10A 32V	P 7886
15A 32V	P 7888
20A 32V	P 7890
25A 32V	P 7892
30A 32V	P 7894



$\$1^{95}$ea

Slow Blow Fuses



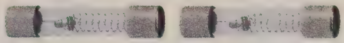
Slow Blow Tubular Glass

M 205 20 x 5mm

100mA	P 7919	1.6A	P 7927
200mA	P 9312	2Amp	P 7928
250mA	P 7920	3.15A	P 9316
315mA	P 7922	4Amp	P 9318
400mA	P 7923	5A	P 7925
500mA	P 7924		
1Amp	P 7926		

$\$1^{95}$ ea

Fuses



Slow Blow Tubular Glass

3AG 32 x 6mm

200mA	P 9381	1.6A	P 9401
250mA	P 7940	2A	P 7946
500mA	P 7942	2.5A	P 7943
630mA	P 7941	3A	P 7947
1A	P 7944	5A	P 7948
1.5A	P 7945	8A	P 7949

$\$1^{95}$ ea

Fast Blow Ceramic Fuses

3AG 32 x 6mm

7A 240V	P 8507	15A 240V	P 8515
8A 240V	P 8508	20A 240V	P 8520
10A 240V	P 8510		

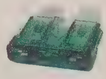
$\$1^{95}$ ea

M205 20 x 5mm

630mA	P 8401
8A	P 8408
10A	P 8410

$\$1^{35}$ea

ATC Car Blade Fuses



5A – Tan	P 7988		
7.5A – Brown	P 7990	30A – Green	P 7999
10A – Red	P 7992	35A – Purple	P 7997
15A – Blue	P 7994	40A – Orange	P 8001
20A – Yellow	P 7996		
25A – Clear	P 7998		

95¢ea

Thermal Fuses

Made in Japan

10A 240V

96°c	P 7984
139°c	P 7986

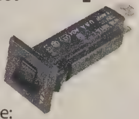
$\$3^{50}$ea

FLUKE Fuses

Replacement fuses for your quality FLUKE meters.

Suits	Cat No	Price
Fluke 73, 75, 77 & 87 (KTK 15) 15A/600V	P 7884	$\$24^{95}$
Fluke 87 (BBS-1) 1A/600V	P 7882	$\$9^{95}$
Fluke 75 & 77 (GDA-630) 630mA/250V	P 7880	$\$4^{95}$

Mini Circuit Breakers



Quality made by Potter & Brumfield(US). Electrical Authority Approved Rating: 32VDC/250VAC. Mounting Hole: 16mm x 1.574mm (Thick). Snap Lock Fitting, Spade Terminals. Soldering not recommended.

1A	P 8201	5A	P 8205	15A	P 8215
2A	P 8202	7A	P 8207		
3A	P 8203	10A	P 8210		

$\$9^{95}$ea

Fuseholders

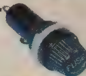
Panel Mount 10A
Insulation Breakdown: 5MOhm/min
Mounting Hole: 13.5mm

Quick Clip/Release Holder

3AG (32 x 6mm)
Face Size: 17mm Square
P 7900

$\$3^{75}$

Screw Cap Holder



3AG Type
P 7902

$\$2^{95}$

M-205 Type
P 7918

$\$2^{35}$

Fingerproof Safety Holder

Don't be Fooled by Imitations!

3AG (32 x 6mm)		**M-205 (20 x 5mm)**	
P 7916	**$5.95**	P-7914	**$4.95**

5AG 38 x 10mm

600VAC 30A
Mounting Hole: 22mm
Securing Bolts: 33mm Centers
P 7915

$\$5^{95}$

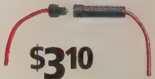
Fuseholders Inline

3AG Light Duty

Non-UV Polyethylene
12 VDC 3A With 600mm Leads
P 7912

$\$2^{10}$

3AG Heavy Duty



12VDC 20A,
100mm Leads
P 7913

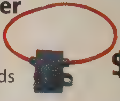
$\$3^{10}$

Waterproof High Quality

32VDC 30A
Ideal for most harsh environments.
P 7917

$\$7^{50}$

ATC Blade Holder



12VDC 30A
With Protection Cap and 300mm #12 Leads
P 7905

$\$2^{95}$

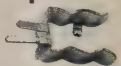
Fuseholders PCB Mount

PCB Mount

3AG Clip Holder with Phenolic Base
3AG P 7908 **M-205** P 7910

$\$1^{50}$

3AG PCB Fuse Clips



Pack of 8 Clips
H1700

$\$2^{75}$

M205 Fuse Clips

Pack of 8 Clips
Cat H 1701

$\$2^{50}$

General Purpose AC/AC

9V CT @ 1.4VA

Secondary Output:
4.5-0-4.5V
Secondary Current: 150mA
Dimensions
31(h) x 37(w) x 32(d)mm
Terminations: Flying Leads
Cat M 2840

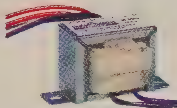
$9.95

12.6V CT @ 1.9VA

Secondary Output:
6.3-0-6.3V
Secondary Current: 150mA
Dimensions:
35(h) x 43(w) x 36(d)mm
Terminations: Flying Leads
Cat M 2851

$9.95

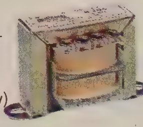
30V/36V CT @ 5VA



Secondary Output:
18-15-0-15-18V
Secondary Output: 140mA
Dimensions: 35(h) x 43(w) x 42(d)mm
Terminations: Flying Leads
Cat M 2856

$11.95

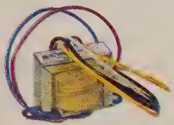
6.3 - 15V @ 15VA



Secondary Output: 0-6.3-7.5-8.5-9.5-12.6 & 15V
Secondary Current: 1A
Dimensions: 50(h) x 61(w) x 53(d)mm
Terminations: Solder Lugs
Cat M 2155

$18.95

15V/30V CT @ 15VA



Secondary Output:
15-7.5-0-7.5-15V
Secondary Current:
500mA
Dimensions: 50(h) x 61(w) x 45(d)mm
Terminations: Flying Leads
Cat M 2860

$19.95

6.3 - 15V @ 30VA

Secondary Output: 0-6.3-7.5-8.5-9.5-12.6 & 15V
Secondary Current: 2A
Dimensions:
60(h) x 70(w) x 68(d)mm
Terminations: Solder Lugs
Cat M 2156

$21.95

12 - 30V @ 30VA

Secondary Output: 0-12-15-17.5-20-24-27.5 & 30V
Secondary Current: 1A
Dimensions: 60(h) x 70(w) x 68(d)mm
Terminations: Solder Lugs
Cat M 6672

$26.95

9 - 24V @ 60VA

Secondary Output:
12-9-0-9-12V
Secondary Current:
Depends on taps used
9V 6.6A, 12V 5A, 15V 4A,
18V 3.3A, 21V 2.9A, 24V 2.5A
Dimensions: 66(h) x 79(w) x 69(d)mm
Terminations: Solder Lugs
Cat M- 2165

$32.50

7.5 - 42.5V @ 60VA

Secondary Output:
0-7.5-10-17.5V
Secondary Current: 1.4A
Dimensions: 66(h) x 79(w) x 69(d)mm
Terminations: Solder Lugs
Cat M 6676

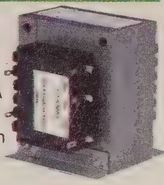
$34.95

12 - 30V @ 60VA

Secondary Output: 0-12-15-17.5-20-24-27.5 & 0-30V
Secondary Current: 2A
Dimensions:
66(h) x 79(w) x 69(d)mm
Terminations: Solder Lugs
Cat M 1991

$32.95

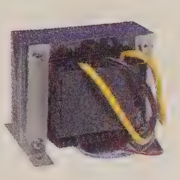
50V @ 60VA



Secondary Output:
25-0-25V
Secondary Current: 1.2A
Dimensions:
66(h) x 79(w) x 69(d)mm
Terminations: Solder Lugs
Cat M 6680

$49.95

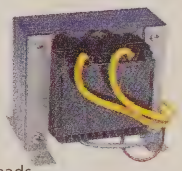
56V CT @ 120VA



Secondary Output:
28-0-28V
Secondary Current: 2A
Dimensions:
80(h) x 96(w) x 74(d)mm
Terminations: Flying Leads
Cat M 0144

$59.95

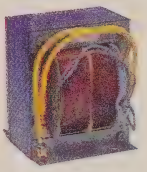
18V @ 120VA



Secondary Output:
0-18V
Secondary Current: 6A
Dimensions:
80(h) x 96(w) x 74(d)mm
Terminations: Flying Leads
Cat M 2000

$59.95

18V @ 300VA



Secondary Output: 0-18V
Secondary Current: 16.7A
Dimensions: 114(h) x95(w) x 95(d)mm
Cat M 2010

$99.95

Audio & Trigger Transformers

Suitable for transistor radio replacements, transistor projects and oscillator circuits requiring coupling transformers.

1K CT:8Ohm

Primary:
1K ohm
Secondary:
8 ohm
Use: 350mW Output Coupling
Construction: Iron Core
Size: 11(h) x 15(w) x 14(d)mm
Cat M 0216

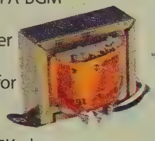
$3.95

3K CT: 3K

Primary:
3K ohm
Secondary:
3K ohm
Use: Coupling
Size:
15(h) x 17(w) x 15(d)mm
Construction: Iron Core.
Cat M 0222

$4.50

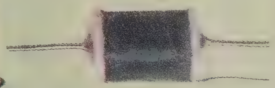
Audio Line Transformer



Ideal for most PA-BGM applications.
Suits all speaker impedances.
Multi-tapped for use with 100V or 70V lines.
Primary: 2.5K, 5K ohms
Output Windings: 2, 4, 8, 16 ohms
Dimensions: 35(h)x62(w)x37(d)mm
Rated: 4W RMS.
Cat M 1100

$9.95

Trigger Transformer



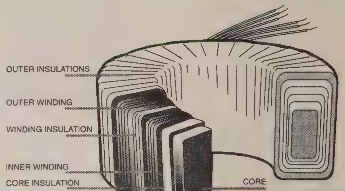
This 240V/6kV transformer suits Xenon Flashtubes (P-8164 & P-8166).
Cat M 0104

$2.95

Toroidal Transformers

The Toroidal transformer is now accepted as the standard in the industry, replacing the laminated type. As toroidal transformers offer the advantages in size, weight and lower radiated field.

- Each toroidal is supplied with 2 x Rubber Spacing Washers, 1 x Steel Mounting Bolt and 1 x Nut.
- Smaller size and weight to meet slimline requirements.
- High efficiency enabling conservative rating whilst maintaining size advantages.
- Simple, quick, single bolt mounting



160VA Toroidal

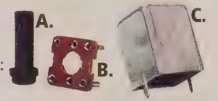
Cat No.	Volts	Current	Termination	Dimensions	Weight
M 1605	25/25	3A	Fly leads	112 x 40mm	1.75Kg

$79.95

300VA Toroidal

Cat No.	Volts	Current	Termination	Dimensions	Weight	Price
M 1610	28/28	5.3A	Fly leads	115 x 58mm	2.4Kg	$79.95
M 1615	40/40	3.75A	Fly leads	115 x 58mm	2.4Kg	$89.95
M 1620	50/50	3A	Fly leads	115 x 58mm	2.4Kg	$89.95

Coil Formers & Accessories



A. Former

Material: Phenolic
Outside Diameter: 4.83mm
Winding Height: 14mm (Max)
Threading: Suits 4mm Ferrite Cores.
Cat R 5020

$1.95

B. 6-Pin Former Base

Cat R 5010

$1.95

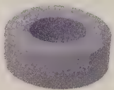
C. Tinned Copper Screening CAN

12.7mm(w) x 13.4(d) x 17.8(h)mm.
Cat R 5000

95¢

Toroids

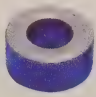
Iron Powder Toroid



Enamel Coated, AL = 45nH (approx) 14.8mm (OD) x 8mm (ID) x 6.35mm (H). Suit EMI Suppression as choke in TRIAC circuits.
Cat R 5410

$2.25

Miniature Toroid



F43 Material – For RF suppression (30MHz – 400MHz) in Amplifiers, etc. 9.5mm (OD) x 5mm (ID) x 5mm (L), AL=520nH
Cat R 5400

80¢ea

Toroidal Balun Kit

Make your own 3-30MHz balun or impedance matching transformer. Can also be used for RFI suppression by winding speaker leads through the core. Kit contains 2" toroid and insulated copper wire.
Cat D 5350

$24.95

4mm Ferrite Cores

Pack of 4

10mm(long) x 4mm (diam) • 0.5mm thread pitch • F29 suits 10-220MHz operation • ui=12.
Cat R 5030

$2.95/pk

F16 suits 0.5-15MHzMHz operation • ui=125.
Cat R 5025

$2.95/pk

Ferrite Beads

Normally threaded on wire leads to reduce EMI radiation and spurious effects from undesired RF pickups. Usable also as cores for pulse and wideband transformers.

Single Hole, Low Frequency

F8 Material – for LF Suppression. 4mm (OD) x 2mm(ID) x 5mm(L)
Cat R 5420

$1.20ea

Single Hole, High Frequency

F29 Material – For HF/VHF Suppression. 4mm (OD) x 2mm (ID) x 5mm (L)
Cat R 5425

$1.20ea

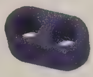
6-Hole Bead

F14 Material – For HF/VHF Suppression. 6mm (OD) x 10mm (ID) x 0.9mm Holes (x 6)
Cat R 5430

$1.75ea

Balun Formers

F14 Ferrites



1050/1/F14. 13.5mm x 13.2 mm x 7.4mm. In pack of two.
Cat R 5440

$2.95

F29Ferrites

1050/2/F29. 6.5mm x 13.2mm x 7.4mm. In pack of two.
Cat R 5445

$2.95

Ferrites & Relays

Aerial Rod with Coil

Ferrite Rod with prewound B/C coil. Used in pocket radios, Funway 1&2 etc.
Cat R 5100

$4.95ea

Aerial Rod

F14 Grade suitable for LW & MW antenna coils and RFI / transients suppression 194mm (L) x 9mm (Diam)
Cat R 5105

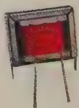
$5.95ea

Slug Tuned IF/OSC Coil Pack

Set comprises of 1st, 2nd & 3rd 455kHz standard miniature IF transformers and b/c oscillator coil.
Cat R 5040

$4.95ea

DC Power Choke



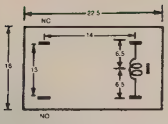
Filter used for reducing noise and voltage spikes in electronic equipment.
Inductance @ 1A: 1mH (approx)
Max Current: 4 Amps(Cont.)
Dimensions: 20 x 16 x 16mm
Cat R 5300

$6.95

RF Chokes

Value	(mA)	Cat No	Value	(mA)	Cat No
1.0 uH	300	R 5200	82 uH	200	R 5226
1.5 uH	300	R 5202	100 uH	200	R 5228
2.2 uH	300	R 5204	150 uH	100	R 5230
3.3 uH	300	R 5206	220 uH	100	R 5232
4.7 uH	300	R 5208	330 uH	50	R 5234
6.8 uH	300	R 5210	470 uH	50	R 5236
8.2 uH	300	R 5212	560 uH	50	R 5238
10 uH	300	R 5214	820 uH	50	R 5240
15 uH	200	R 5216	1.0 mH	58	R 5242
22 uH	200	R 5218	1.5 mH	58	R 5244
33 uH	200	R 5220	2.5 mH	33	R 5246
47 uH	200	R 5222	4.7 mH	20	R 5248
68 uH	200	R 5224	10 mH	37	R 5250

$1.95ea

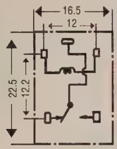


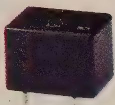
SPDT 8V DC – 12V DC

Contact Current (max):	3A @ 120V AC
Contact Voltage (max):	250V AC
Coil Voltage (nom):	9V DC
Coil Resistance:	225 ohms
Operating Time (typical):	15ms
Release Time (typical):	10ms

Overall Size: 22.6(l)x16.4(w)x21.3(h)mm

Cat P 8008 **$4.95**

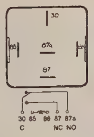


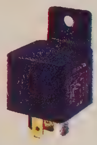


SPDT 12V DC

Contact Current (max):	10A
Contact Voltage (max):	250V AC, 30V DC
Coil Voltage (nom):	12V DC
Coil Resistance:	400 ohms
Operating Time (typical):	10ms
Release Time (typical):	10ms

Cat P 8017 **$5.95**



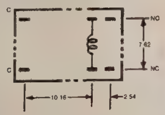


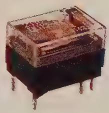
SPDT 12V DC Horn Relay

Ideal for car/boat horn circuits, alarms, ignition cut-outs or any application where high currents have to be switched.

Contact Current:	20 amps DC
Contact Voltage:	12V DC
Coil Voltage:	12V DC
Termination:	Spade Lugs
Overall Size:	30(l)x30(w)x26(h)mm

Cat P 8035 **$5.95**



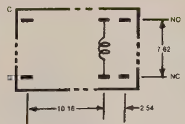


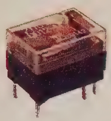
SPDT 5V DC

High sensitivity type. Gold-overlay silver contacts.

Contact Rating:	28V DC @ 1A 120V AC @ 0.5A
Contact Switching Current:	2A
Contact Switching Voltage:	150V DC
Coil Resistance:	120 ohms @ 42mA, 5V DC
Operating Time (typical):	5ms
Release Time (typical):	5ms
Overall Size:	15.6(l)x10.6(w) x10.5(h)

Cat P 8005 **$8.60**



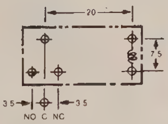


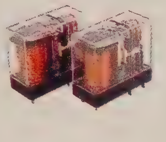
SPDT 12V DC

High sensitivity type. Gold-overlay silver contacts.

Contact Rating:	28V DC @ 1A 120V AC @ 0.5A
Contact Switching Current:	2A
Contact Switching Voltage:	150V AC
Coil Resistance:	700 ohms @ 17mA, 12V DC
Operating Time (typical):	5ms
Release Time (typical):	5ms
Overall Size:	15.6(l)x10.6(w) x10.5(h)

Cat P 8007 **$8.60**

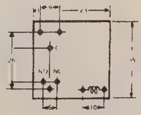


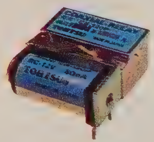


SPDT 12V DC High-Power Relay

Contact Current (max):	10A
Contact Voltage (max):	240V AC, 30V DC
Nominal Coil Voltage:	12V DC
Coil Resistance:	200 ohms
Operating Time (typical):	20ms
Release Time (typical):	10ms
Overall Size:	29(l)x13(w) x25(h)mm

Cat P 8010 **$9.95**

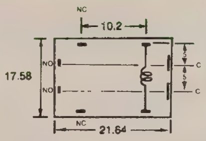




SPDT 12V DC Coaxial Relay

Coil Voltage (nom):	12V DC
Current Consumption:	80mA @ 12V DC
Input Power (max):	150W PEP @ 500MHz
Maximum Frequency:	Up to 1500MHz
Switching Time (typical):	<15ms
Insulation:	>100 Mohms @ 500V DC
Overall Size:	35(l)x35(w) x18(h)mm

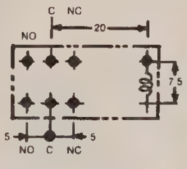
Cat P 8030 **$52.95**



DPDT 12V DC

Contact Current (max):	5A @ 120V AC
Contact Voltage (max):	120V AC
Coil Voltage (nom):	12V DC
Coil Resistance:	280 ohms
Operating Time (typical):	10ms
Release Time (typical):	7ms
Overall Size:	20.5(l)x16(w) x16.3(h)mm

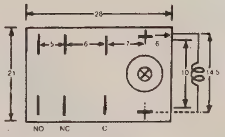
Cat P 8024 **$5.50**

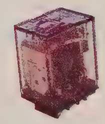


DPDT 12V DC High-Power Relay

Contact Current (max):	10A
Contact Voltage:	240V AC, 30V DC
Nominal Coil Voltage:	12V DC
Coil Resistance:	200 ohms
Operating Time (typical):	20mS
Release Time (typical):	10mS
Overall Size:	29(l)x13(w) x25(h)mm

Cat P 8012 **$12.95**





DPDT 12V DC Heavy Duty Relay

High contact to coil voltage isolation.

Contact Current (max):	10A
Contact Voltage (max):	240V AC
Nominal Coil Coltage:	12V DC
Coil Resistance:	160 ohms
Operating Time (typical):	20ms
Release Time (typical):	20ms
Overall Size:	28(l)x21(w) x35(h)mm

Cat P 8014 **$14.95**

Toggle Switches

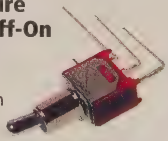
Ultraminiature

SPDT Ultraminiature

Rating: 240V AC 1.5A
Mounting: Threaded bush
Overall Size: 8x5x28mm
Clearance: 14.5mm
Clear Out: 5mm
Cat P 7673

$3.75

SP3T Ultraminiature Right Angle On-Off-On



Rating: 28V DC 3A
Mounting: PCB
Overall Size: 8x5x25mm
Clearance: 15mm
Cut Out: 5mm
Cat P 7676

$3.95

DPDT Ultraminiature

Rating: 125V AC 3A
Mounting: Threaded bush
Overall Size: 11x9x28mm
Clearance: 14.5mm
Cut Out: 5mm
Cat P7674

$3.95

DPDT Red Sub Mini Toggle

Rating: 250V AC @ 3A
Mounting: Panel Mount
Overall Size: 9x8mm
Clearance: 11mm
Cut Out: 6mm diam.
Cat P 9745

$3.95

Miniature

SPDT Miniature

Rating: 240V AC @ 2A
Mounting: Threaded bush
Overall Size: 13x7x33mm
Clearance: 14mm
Cut Out: 6.5mm
Cat P 7654

$3.95

SP3T Miniature Right Angle

Rating: 250V AC 2A
Mounting: PCB
Overall Size: 7x13x35mm
Clearance: 21mm
Cut Out: 6.5mm
Cat P 7686

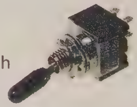
$4.95

DPDT Miniature

Rating: 240V AC @ 2A
Mounting: Threaded bush
Overall Size: 13x12x33mm
Clearance: 14.5mm
Clear Out: 6.5mm
Cat P 7656

$4.75

DPDT Miniature Heavy Duty



Rating: 125V AC 10A
Mounting: Threaded bush
Overall Size: 13x13x36mm
Clearance: 19mm
Clear Out: 6mm
Cat P 7652

$7.25

DP3T Miniature Centre "Off"

Rating: 240V AC 2A
Mounting: Threaded bush
Overall Size: 12x12x35mm
Clearance: 14.5mm
Clear Out: 6.5mm
Cat P 7682

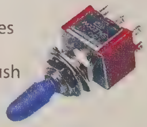
$4.95

DP3T Miniature Centre "Off"

Rating: 240V AC 2A
Mounting: Threaded bush
Overall Size: 13x12x33mm
Clearance: 14.5mm
Clear Out: 6.5mm
Cat P 7684

$4.95

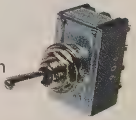
DP3T Miniature Centre "Off"



Momentary "On" Both Sides
Rating: 240V AC 2A
Mounting: Threaded bush
Overall Size: 13x7x33mm
Clearance: 14.5mm
Clear Out: 6.5mm
Cat P 7689

$5.95

4PDT Miniature



Momentary "On" Both Sides
Rating: 240V AC 3A
Mounting: Threaded bush
Overall Size: 22x13x34mm
Clearance: 14.5mm
Clear Out: 6.5mm
Cat P 7658

$9.95

Standard

SPST Standard

With "On/Off" Indicator Plate
Rating: 125V AC 3A
Mounting: Threaded bush
Overall Size: 14x27x42mm
Clearance: 20.5mm
Cut Out: 12mm
Cat P 7668

$3.95

DPDT Standard

With "On/Off" Indicator Plate
Rating: 125V AC @ 6A
Mounting: Threaded bush
Overall Size: 18x25x48mm
Clearance: 26mm
Cut Out: 12mm
Terminals: Solder
Cat P 7670

$5.95

DP3T Standard Centre "Off"

With "On/Off/On" Plate
Rating: 250V AC 6A
Mounting: Threaded bush
Overall Size: 19x34x53mm
Clearance: 28mm
Cut Out: 12mm
Terminals: Screw
Cat P 7672

$6.95

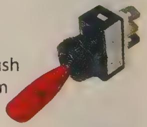
DP3T Standard Centre "Off"

Momentary "On" Both Sides
Rating: 12V DC 20A
Mounting: Threaded bush
Overall Size: 26x33x65mm
Clearance: 31mm
Cut Out: 12mm
Cat P 7650

$7.95

Special

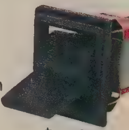
SPST Illuminated



Contacts: 12V DC 16A
Lamp: 12V
Mounting: Threaded bush
Overall Size: 15x25x65mm
Clearance: 26mm
Cut Out: 12mm
Cat P 7666

$5.95

DPDT Miniature Lever Action Paddle



Rating: 240V AC 2A
Mounting: Snap Lock
Overall Size: 11.4x19.4x35mm
Clearance: 19mm
Cut Out: 12.7x15.2mm
Cat P 7693

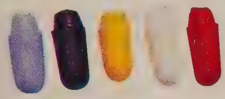
$5.95

SPST Standard – Waterproof

Rating: 12V DC 10A
Mounting: Threaded bush
Overall Size: 32x18x58mm
Clearance: 40mm
Cut Out: 12mm
Terminals: Flying Leads
Cat P 7664

$14.95

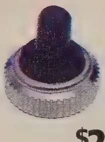
Toggle Accessories



Mini Toggle Switch Caps

In pack of 5 colours.
Cat H 1909

$1²⁵pk



Weatherproof Hood

Designed for miniature toggle switches.
Cat H 1914

$2⁵⁰

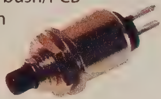
Weatherproof Hood

Designed for standard M12 threaded toggle switches.
Cat H 1915

$2⁹⁵

Momentary

SPST Momentary "On"



Rating: 120VAC 0.5A
Mounting: Threaded bush/PCB
Overall Size: 7x20.6mm
Clearance: 13mm
Cut Out: 5mm
Pin Size: 1mm
Extra small.
Cat P 7558

$2⁹⁵

Single Pole Miniature – Normally Open

Rating: 125V AC 1A
Mounting: Threaded Bush
Overall Size: 28.1x9.5mm
Clearance: 17.5mm
Cut Out: 7.1mm
Black Cat P 9750
Red Cat P 7560
White Cat P 9768

$3²⁵ea

Single Pole Miniature – Normally Closed

Rating: 125V AC 1A
Mounting: Threaded bush
Overall Size: 28.1x9.5mm
Clearance: 17.5mm
Cut Out: 7.1mm
Model: MS-313
Black Cat P 7561
Red Cat P 9751

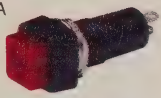
$3²⁵ea

SPST Momentary "On"

Rating: 120VAC 1A
Mounting: Threaded bush
Overall Size: 9x5x18mm
Clearance: 14.5mm
Cut Out: 5mm
Ultra Miniature
Cat P 7559

$3⁵⁰

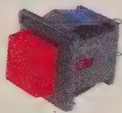
SPST Momentary Action Push 'On'



Rating: 250V AC 3A
Overall Size: 15x15 x37.8mm
Clearance: 27.3mm
Cut Out: 12mm
Mounting: Threaded bush
Cat P 7568

$3⁵⁰

SP Momentary Action Push 'On'



Rating: 240VAC 1A
Mounting: Snap Lock
Overall Size: 14x14x24.5mm
Clearance: 19.5mm
Cut Out: 11x12.5mm
Red Cat P 7552
Blue Cat P 7550

$3⁷⁵ea

SPST Momentary Push "On"

Rating: 120VAC 1A
Mounting: PCB
Overall Size: 9x5x18mm
Cut Out: 5mm
Pin Size: 0.8mm
Leg Spacing: 3.8mm
Ultra Mini Right Angle
Cat P 7576

$3⁹⁵

SPST Momentary Push Switch

Rating: 250V AC @ 3A
Mounting: Round Panel Mount
Overall Size: 35.5x17mm diam.
Clearance: 15mm
Cut Out: 12mm diam.
Pin Spacing: 5mm
Red Push On
Cat P 9755

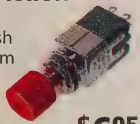
$3⁹⁵

SPST Momentary Push 'On'

Rating: 250V AC @ 1A
Mounting: Round Plated
Overall Size: 31mm
Clearance: 11.5mm
Cut Out: 10.2mm
Pin Spacing: 4.6mm
Round Head
Cat P 9762

$5⁹⁵

DPDT Momentary Action



Rating: 125VAC 3A
Mounting: Threaded bush
Overall Size: 41.5x13x13mm
Clearance: 26.1mm
Cut Out: 6mm
Model: MS-300
Cat P 7574

$6⁹⁵

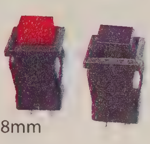
Alternate Action

SPST Alternate Action

Rating: 250V AC 3A
Overall Size: 15x15 x37.8mm
Clearance: 27.3mm
Cut Out: 12mm
Mounting: Threaded bush
Cat P 7566

$3⁵⁰

SP Mini Push "On/Off"



Rating: 250V AC 1A
Mounting: Snap Lock
Overall Size: 14.2x14.2x28mm
Clearance: 22mm
Cut Out: 11x12.5mm
Red Cat P 7540
Black Cat P 7542

$4³⁰ea

SPST On/Off Push Switch

Rating: 250V AC 3A
Mounting: Round Panel Mount
Overall Size: 35.5x17mm diam.
Clearance: 15mm
Cut Out: 12mm diam.
Pin Spacing: 5mm
Back On/Off Latching
Cat P 9757

$5⁹⁵

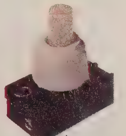
DPDT Alternate Action

Rating: 125VAC 3A
Mounting: Threaded bush
Overall Size: 41.5x11x11.5mm
Clearance: 25.5mm
Cut Out: 6mm
Model: MS-197
Cat P 7564

$6⁹⁵

Lamp Switches

SPST Lamp Switch



Rating: 240VAC 2A
Mounting: Threaded bush
Overall Size: 13x23x29mm
Clearance: 11mm
Cut Out: 10mm
Terminals: Screw
Cat P 7874

$2⁹⁵

DPDT Lamp Switch

Rating: 240VAC 2A/Pole
Mounting: Threaded bush
Overall Size: 13x23x33mm
Clearance: 17mm
Cut Out: 10mm
Terminals: Screw
Cat P 7876

$3⁵⁰

Special Push Button

Door Bell Button

Rating: 12/24V DC 1A
Overall Size: 23x77mm
Mounting: Screw
Cat P 7554
$3.95

SP Momentary Push "On"

Rating: 35VDC 10mA
Mounting: PCB
Pin Size: 0.88 Square
Pin Spacing: On 5mm Square
Cut Out: 8mm Square
Single Black only Cat P 7572 $1.95
Pack of 4 Colours Cat P 7570 $5.95

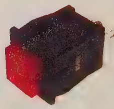
SP Pull On/Push Off Common Gnd

Rating: 12VDC 5A
Mounting: Threaded Bush
Overall Size: 30x22.5x42.4mm
Clearance: 21.6mm
Cut Out: 7.85mm
Terminals: Screw
Cat P 7563
$5.95

SP Pull On/Push Off

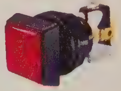
Rating: 24VDC 10A
Mounting: Threaded Bush
Overall Size: 50x19mm
Clearance: 35.5mm
Cut Out: 10mm
Terminals: Screw
Cat P 7562
$6.95

Illuminated SP Momentary



Rating: 125V AC 1A
Lamp: 6.3V @ 150mA Midget Screw
Cut Out: 18 x 18mm
Clearance: 33.5mm
Mounting: Snap Lock
Model: MS-080
Cat P 7556
$5.95

Illuminated SPDT Momentary



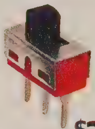
Rating: 240V AC 10A
Lamp: 12-14V
Lens & Collar: 35mm Square
Cut Out: 24.5mm
Clearance: 56.2mm (depth)
Mounting: Threaded bush
Red Cat P 7591
Green Cat P 7593
$7.95

SPDT Illuminated Soft Touch

Contacts: 250VAC 1A
Lamp: 12V 55mA T1 Bipin
Mounting: Threaded Bush
Cut Out: 12mm
Clearance: 40mm
Red Cat P 7580
Blue Cat P 7582
Green Cat P 7584
Yellow Cat P 7586
$19.95

Slide Switches

SPDT PCB Mount

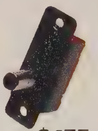


Rating: 26VDC 6A
Mounting: PCB
Overall Size: 13x7x18mm
Clearance: 13mm
Cut Out: 4x8mm
Cat P 7602
$3.95

DPDT Miniature

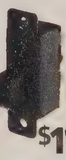
Rating: 50VDC 0.5A
Mounting: 2xM2 Screw Holes
Overall Size: 23x8x21mm
Clearance: 12mm
Cut Out: 9x5mm
Cat P 7612
$1.25

DPDT Sub-Miniature



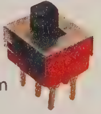
Rating: 125VAC 0.5A
Mounting: 2xM3 Screw Holes
Overall Size: 35x13x26mm
Clearance: 13mm
Cut Out: 6x13mm
Cat P 7616
$1.75

DPDT Miniature



Rating: 50VDC 0.5A
Mounting: 2xM2 Screw Holes
Overall Size: 23x8x19mm
Clearance: 12mm
Cut Out: 9x4.5mm
Cat P 7610
$1.95

DPDT PCB Mount



Rating: 240VAC 2A
Mounting: PCB
Overall Size: 12.8x11.3x14.3mm
Clearance: 9.4mm
Cut Out: 3.9x6.1mm
Cat P 7600
$2.95

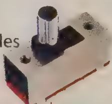
DP3T Miniature

Rating: 50VDC 0.5A
Mounting: 2xM3 Screw Holes
Overall Size: 24x8x21mm
Clearance: 12mm
Cut Out: 5x12mm
Cat P 7614
$1.75

3PDT Medium

Rating: 30VDC 0.3A
Mounting: 2xM3 Screw Holes
Overall Size: 36x19x23mm
Clearance: 12mm
Cut Out: 6x13mm
Limited Stock Cat P 7604
$3.95

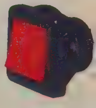
3P3T Sub-Miniature



Rating: 30VDC 0.3A
Mounting: 2xM2.5 Screw Holes
Overall Size: 25x10.5x27mm
Clearance: 15mm
Cut Out: 6x12mm
Cat P 7622
$2.75

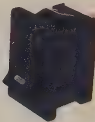
Rocker Switches

SPST NON-Illuminated



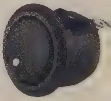
Rating: 240VAC 6A
Overall Size: 23.2x23.2x26.8mm
Clearance: 24mm
Cut Out: 18mm
Mounting: Panel Lock Nut
Cat P 7699
$2.95

SPST NON-Illuminated



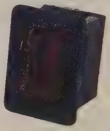
Rating: 12VDC 2A
Overall Size: 15.5x21x23.5mm
Clearance: 17.5mm
Cut Out: 13x19mm
Mounting: Snap Lock
Cat P 7700
$3.75

SPST NON-Illuminated



Rating: 240VAC 6A
Flange Diameter: 22.95mm Round
Cut Out: 19.84mm
Clearance: 23.8mm
Mounting: Snap Lock
Cat P 7701
$5.70

SPST Illuminated



Rating: 250VAC 6A
Illumination: 240V Neon
Overall Size: 15x20x25mm
Clearance: 22mm
Cut Out: 12.9x19.2mm
Mounting: Snap Lock
Cat P 7703
$4.95

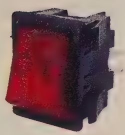
SPST Illuminated

Rating: 240VAC 15A
Illumination: 240V Neon
Overall Size: 14x29.8x41.2mm
Clearance: 33.3mm
Cut Out: 11.5x28.4mm
Mounting: Snap Lock
Cat P 7705
$5.95

SPST Illuminated

Rating: 12VDC 30A
Illumination: 12V Lamp
Overall Size: 30.6x19.2x44.72mm
Cut Out: 12 mm
Clearance: 35.5mm
Mounting: Panel Lock Nut
Red Cat P 7723
Green Cat P 7726
$5.95

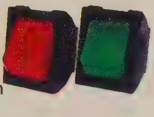
DPST Illuminated



Rating: 240VAC 15A
Illumination: 240V Neon
Overall Size: 22.73x30.35 x33mm
Clearance: 31mm
Cut Out: 27.2x22.1mm
Mounting: Snap Lock
Cat P-7707

$6.95

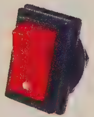
DPST Illuminated



Rating: 250VAC 10A
Illumination: 240V Neon
Overall Size: 25.2x31.5 x30.7mm
Clearance: 21.4mm
Cut Out: 27.2x22mm
Mounting: Snap Lock
Red Cat P 7709
Green Cat P 7710

$5.95

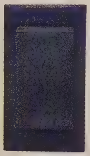
DPDT NON-Illuminated



Rating: 250VAC 3A
Overall Size: 20x30x30.7mm
Clearance: 15.7mm
Cut Out: 17mm
Mounting: Panel Lock Nut
Cat P 7720

$5.95

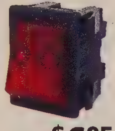
DP3T NON-Illuminated



Switching: Momentary "ON" Both Sides Centre Return OFF
Rating: 250VAC 5A
Overall Size: 44x25x46mm
Clearance: 40mm
Cut Out: 34x20mm
Mounting: Snap Lock
Cat P 7730

$7.45

DPDT 12V Illuminated



Rating: 240VAC 10A
Illumination: 12V Lamp
Overall Size: 23x30.5x33mm
Clearance: 30mm
Cut Out: 27x22mm
Mounting: Snap Lock
Cat P 7708

$6.95

Miscellaneous Switches

Numeric Keypad

1
2
3
4
5
6
7
8
9
*
0
#

Switching: Matrix Scan
Overall Size: 51x64x11.5mm
Cut Out: 46x59mm
Clearance: 8.2mm
Mounting: Screws
Circuit Diagram Included
Cat P 7810

$9.95

DPDT Single

Rating: 100VAC 0.5A/ 25VDC 1A
Switch Action: Push Button
Cut Out: 11mm Diameter
Clearance: 25mm
Mounting: Screw/PCB
Cat P 7752

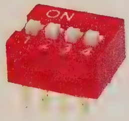
$2.95

DPDT 4-Way Switch Bank

Rating: 100VAC 0.5A/ 25VDC 1A
Switch Action: Push Button
Cut Out: 11mm Holes @ 17.5mm Centres
Clearance: 25mm
Mounting: Screw/PCB
Cat P 7750

$7.95

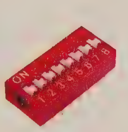
4-Way SPST PCB DIP



Rating: 24VDC 50mA (Make & Break) 50VDC 100mA (Steady)
Overall Size: 11x10x5mm
Mounting: PCB
Cat P 7851

$2.95

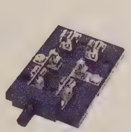
8-Way SPST PCB DIP



Rating: 24VDC 50mA (Make & Break) 50VDC 100mA (Steady)
Overall Size: 22x16x10mm
Mounting: PCB
Cat P 7854

$4.45

DPDT Knife Switch



Rating: 50VDC
Overall Size: 43x79x20mm
Body Size: 43x60x6mm
Terminals: Screw
Made in Japan
Cat P 7862

$3.95

SPDT Micro

Rating: 250VAC 10A
Overall Size: 38x21x10mm
Mounting: Screw
Cat P 7800

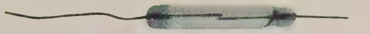
$4.95

SPDT Mini Micro

Rating: 240VAC 1.5A
Overall Size: 20x15x7mm
Mounting: Screw
Cat P 7802

$3.50

Alarm Switches



Mini Reed Switch

Rating: 200VDC 0.5A
Glass Size: 12.7mm x 1.8mm
Switch: Normally Closed (with Magnet)
Cat P 7856

$3.15

Bar Magnet

Overall Size: 26x8x8mm
Operation Distance: 10mm from above reed switch
Cat L 5214

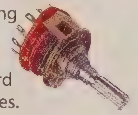
$3.50

Mercury "Tilt" Switch

Rating: 24VDC 1.5A
Glass Size: 25x6mm (approx)
Cat P 7860

$5.75

Rotary Switches



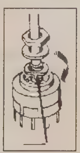
Precision-made rotary switches that are suitable for PCB mounting or panel mounting (9mm mounting hole). Shafts are of the standard (6mm) metric fluted types. They will accept any standard 6mm knob. Switch contacts are 'make before break' in order to help eliminate clicking and popping. Matching washers and nuts are provided with every switch.

Poles	Positions	Cat No
6	2	P 7502
4	3	P 7504
3	4	P 7506
2	5	P 7508
2	6	P 7510

$3.95ea

Variable Position Rotary Switches

A great range of quality programmable position rotary switches, fully enclosed with a plastic shaft and suitable for grub-screw style knobs. Supplied with nut, lock washer and 'stop ring' which allows you to vary the number of switching positions. You can program 2 to 12 positions @ 30° indexing. Rated 240V @ 150mA with silver plated brass contacts.



Poles	Positions	Cat No
3	2-4	P 7516
1	2-12	P 7518
4	2-3	P 7520
2	2-6	P 7522

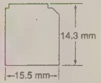
$4.95ea

Coloured Plastic Knobs

13mm Diameter

Shaft Type: Screw Fit

Red	Cat P 7072
Blue	Cat P 7074



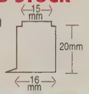
$2.25

16mm Diameter (19mm with Pointer)

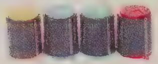
LIMITED STOCK

Shaft Type: 6mm Fluted Push-on

Red	Cat P 7050
Orange	Cat P 7052
Blue	Cat P 7054
Green	Cat P 7056



$1.95

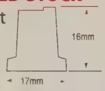


17mm Diameter

LIMITED STOCK

Shaft Type: 6mm Fluted Push Fit

Red	Cat P 7130
Green	Cat P 7132
Yellow	Cat P 7134
White	Cat P 7136

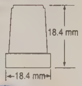


$1.20

18mm Diameter

Shaft Type: 6mm Fluted Push Fit

Red	Cat P 7040
Blue	Cat P 7042
Grey	Cat P 7044
Green	Cat P 7046
Yellow	Cat P 7048

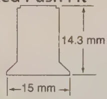


$1.50

Metric Range

15mm Diameter plus Skirt

Shaft Type: 6mm Fluted Push Fit
Cat P 7126

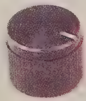


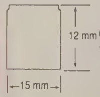
$1.25

15mm Diameter with Silver Shoulder

Shaft Type: 6mm Fluted Push Fit
Cat P 7000

LIMITED STOCK

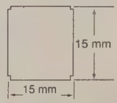




$1.95

15mm Diameter with Fluted Grip

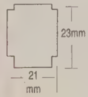
Shaft Type: 6mm Fluted Push Fit
Cat P 7002



$1.95

21mm Diameter with Fluted Grip

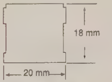
Shaft Type: 6mm Fluted Push Fit
Cat P 7004



$2.50

20mm Diameter Aluminium Shell

Knurled Fingergrip Shaft Type: 6mm Fluted Push Fit
Cat P 7006

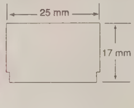


$2.75

25mm Diameter Satin Finish

Fluted Fingergrip
Cat P 7008

$2.95

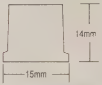


12mm Diameter (15mm plus Skirt)

Comes in two fittings:

Fluted Push Fit	Cat P 7010
Screw Fit	Cat P 7020

Imperial Shaft



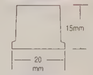
$1.95

16mm Diameter (20mm incl. Skirt)

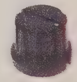
Comes in two fittings

Fluted Push Fit	Cat P 7012
Screw Fit	Cat P 7022

Imperial Shaft



$1.95

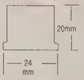


20mm Diameter (24mm incl. Skirt)

Comes in two fittings:

Fluted Push Fit	Cat P 7014
Screw Fit	Cat P 7024

Imperial Shaft



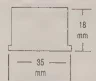
$2.25

28mm Diameter (35mm incl. Skirt)

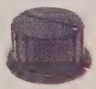
Comes in two fittings:

Push-on	Cat P 7016
Screw fit	Cat P 7026

Imperial Shaft



$2.75

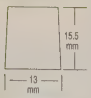


Imperial Range

Smooth Bore with Grub Screw to Suit 1/4" Shafts

13mm Diameter Instrument

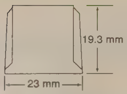
Brass Insert with Grub Screw
Cat P 7124



$2.65

Deluxe Instrument

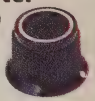
with 4-Way Fingergrips
Cat P 7122

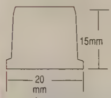


$2.65

15mm Diameter (20mm incl. Skirt)

with Dot Indicator
Cat P 7100

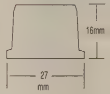


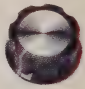


$2.95

24mm Diameter (27mm incl. Skirt)

with Silver Top Insert
Cat P 7106

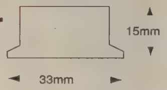




$2.95

30mm Diameter (33mm incl. Skirt)

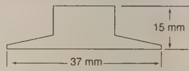
with Silver Top Insert
Cat P 7105

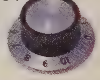


$3.95

24mm Diameter Instrument (37mm incl. Skirt)

0-10 Calibrated Skirt
Cat P 7104



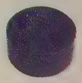


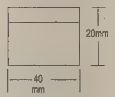
$2.95

Hi-Fi/Audio Knobs

40mm Diameter

Plain Black Aluminium Shell
with Indicator Cut
Shaft Type: 6mm Fluted Push Fit
Shaft Depth: 17mm
Cat P 7110



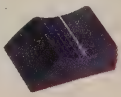


$3.95

Slider Pot

Knob Size:	12mm x 23mm
Shaft Hole:	6.5mm (Wide) x 4mm (Deep)

Cat P 7150



$1.40

24mm Single Gang Rotary Pots

Metric Linear: Mounting hole – 8mm

Type Ohms	Cat No.	Type Ohms	Cat No.
500	R 6802	50K	R 6809
1K	R 6803	100K	R 6810
5K	R 6805	500K	R 6812
10K	R 6806	1M	R 6813
20K	R 6807	2M	R 6814

$3.95 ea

Metric Log:
Mounting hole – 8mm

Type Ohms	Cat No.
10K	R 6820
50K	R 6823
100K	R 6824

$3.95 ea

24mm Single Gang with Switch

Metric Log: Mounting hole – 8mm

Type Ohms	Cat No.
10K	R 6879
1M	R 6888

$5.95 ea

24mm Dual Gang Rotary Pots

Metric Linear: Mounting hole – 8mm		Metric Log: Mounting hole – 8mm	
Type Ohms	Cat No.	Type Ohms	Cat No.
10K	R 6834	50K	R 6853
20K	R 6836		
50K	R 6839		
100K	R-6840		

$5.95 ea

17mm Miniature Rotary Pots with Switch

All require an 8mm mounting hole.

17mm Metric Log:

Type Ohms	Cat No.	Type Ohms	Cat No.
1K	R 1972	20K	R 1979
50K	R 1970		

Limited stocks available

$2.95 ea

16mm Single Gang Rotary

Metric Linear:
Mounting hole – 7mm

Type Ohms	Cat No.	Type Ohms	Cat No.
500	R 7549	10K	R 7555
1K	R 7551	25K	R 7557
5K	R 7553	50K	R 7559

$3.95 ea

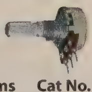
16mm Metric Linear

Mounting Hole – 8mm

Type Ohms	Cat No.		
100k	R 7561	1M	R 7567
250k	R 7563	2M	R 7569
500k	R 7565		

$3.95 ea

16mm Metric Log



Mounting Hole – 8mm

Type Ohms	Cat No.	Type Ohms	Cat No.
500	R 7500		
1K	R 7502		
5K	R 7504	250K	R 7514
10K	R 7506	500K	R 7516
25K	R 7508	1M	R 7518
50K	R 7510	2M	R 7520
100K	R 7512		

$3.95 ea

16mm Dual Gang Rotary Pots

Metric Linear: Mounting Hole – 8mm

Type Ohms	Cat No.	Type Ohms	Cat No.
5K	R 7653	100K	R 7661
10K	R 7655	500K	R 7665
25K	R 7657	1M	R 7667
50K	R 7659	2M	R 7669

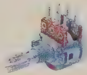
$5.95 ea

Metric Log: Mounting Hole – 8mm

Type Ohms	Cat No.	Type Ohms	Cat No.
5K	R 7604	100K	R 7612
10K	R 7606	500K	R 7616
25K	R 7608	1M	R 7618
50K	R 7610	2M	R 7620

$5.95 ea

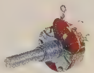
16mm Special Function 'Click'



Multi-Click-50K, 41 'clicks' Dual-Gang/Log	R 7800
Multi-Click-100K, 41 'clicks' Dual-Gang/Log	R 7802
Centre-Click-25K Dual-Gang/Lin.	R 7810
Centre-Click-100K Dual-Gang/Lin.	R 7820

$5.95 ea

Wire Wound Pots



Rated at 3 watts: Mounting Hole – 9mm

Type Ohms	Cat No.	Type Ohms	Cat No.
5	R 6901	1K	R 6915
10	R 6903	2K	R 6917
25	R 6905	5K	R 6921
50	R 6907	7.5K	R 6923
100	R 6909	10K	R 6925
200	R 6911	1k (5W)	R 9520
500	R 6913		

$11.95 ea

Motorised Potentiometer

Dual ganged 50k ohm log pot in a motorised gear housing. Allows both manual and remote control of the carbon film based potentiometer making it ideal for volume control application. Type: Single Shaft Dual Ganged. Taper: Logarithmic. Torque: 100-450 gf.cm. Motor Voltage: 3-6 v dc (4.5 nominal). Speed: .10+/-3 sec/300
Cat R 7830

$19.95

Vertical Mount Trimpots Horizontal Adjust. 5mm

Type Ohms	Cat No.	Type Ohms	Cat No.
100	R 1929	20K	R 1943
200	R 1931	50K	R 1945
500	R 1933	100K	R 1947
1K	R 1935	200K	R 1949
2K	R 1937	500K	R 1951
5K	R 1939	1M	R 1953
10K	R 1941	2M	R 1954

95¢ ea

Large Vertical Mount Trimpots Horizontal Adjust. 10mm

Type Ohms	Cat No.	Type Ohms	Cat No.
100	R 1956	20K	R 1963
200	R 1957	50K	R 1964
500	R 1958	100K	R 1965
1K	R 1959	200K	R 1966
2K	R 1960	500K	R 1967
5K	R 1961	1M	R 1968
10K	R 1962	2M	R 1969

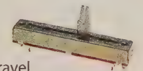
$1.10 ea

Horizontal Mount Trimpots Vertical Adjust. 5mm

Type (Ohms)	Cat No.	Type (ohms)	Cat No.
100	R 1760	20K	R 1773
200	R 1761	50K	R 1775
500	R 1763	100K	R 1777
1K	R 1765	200K	R 1779
2K	R 1767	470K	R 1781
5K	R 1769	1M	R 1783
10K	R 1771	2M	R 1784

95¢ ea

50K Slider Pot



Quality 50K ohm linear pot.
It's 73mm long with 45mm travel.
Cat R 1980

$3.95 ea

Sealed Horizontal Top Adjust Trimpots

Type (Ohms)	Cat No.	Type (ohms)	Cat No.
100	R 1730	250K	R 1740
200	R 1731	500K	R 1741
2K	R 1734	1M	R 1742
25K	R 1737	2M	R 1743
50K	R 1738		

Limited stocks available

95¢ ea

Sealed Horizontal Top Adjust 9.52mm

Type (Ohms)	Cat No.	Type (ohms)	Cat No.
100	R 1745	250K	R 1755
200	R 1746	500K	R 1756
2K	R 1749	1M	R 1757
25K	R 1752	2M	R 1759
50K	R 1753		

Limited stocks available

95¢ ea

Multi-Turn Trimpots

As used in a large variety of test gear, precision instruments, etc. Quality trimpots with 10 turns from end to end.

Type (Ohms)	Cat No.	Price
100	R 1906	$1.25
200	R 1915	$1.25
500	R 1907	$1.25
1K	R 1900	$2.75
2K	R 1908	$1.25
5K	R 1904	$2.75
10K	R 1901	$2.75
20K	R 1902	$2.75
50K	R 1903	$2.75
100K	R 1905	$2.75
250K	R 1916	$1.25
500K	R 1917	$1.25
1M	R 1909	$1.25
2M	R 1918	$1.25

Limited stocks available

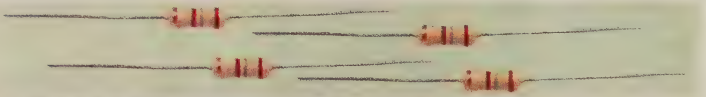
Note: While most Metal Film resistors are supplied in the traditional 5-band colour code, 4-band types are currently stocked. 4 band resistors are easier to read and consequently help prevent confusion when trying to translate the band information. The colour band indicating 1% tolerance is still brown.

1/4W Metal Film Resistors

E24 range resistors.....all 1% tolerance. E24 means that you now get closer values to those you are after, rather than the E12 'Preferred Values'.

15¢ea

Value in ohms	Cat No.	Value in ohms	Cat No.	Value in ohms	Cat No.	Value in ohms	Cat No.
1.2	R 0521	180	R 0556	4.7k	R 0590	82k	R 0622
1.5	R 0523	220	R 0558	5.6k	R 0592	100k	R 0624
10	R 0526	270	R 0560	6.8k	R 0594	120k	R 0626
12	R 0528	330	R 0562	8.2k	R 0596	150k	R 0628
15	R 0530	390	R 0564	10k	R 0598	180k	R 0630
18	R 0532	470	R 0566	12k	R 0600	220k	R 0632
22	R 0534	560	R 0568	15k	R 0602	270k	R 0634
27	R 0536	680	R 0570	18k	R 0604	330k	R 0636
33	R 0538	820	R 0572	20k	R 0605	390k	R 0638
39	R 0540	1.0k	R 0574	22k	R 0606	470k	R 0640
47	R 0542	1.2k	R 0576	27k	R 0608	560k	R 0642
56	R 0544	1.5k	R 0578	33k	R 0612	680k	R 0644
68	R 0546	1.8k	R 0580	39k	R 0614	820k	R 0646
82	R 0548	2.2k	R 0582	47k	R 0616	1M	R 0648
100	R 0550	2.7k	R 0584	51k	R 0617		
120	R 0552	3.3k	R 0586	56K	R 0618		
150	R 0554	3.9k	R 0588	68k	R 0620		



Carbon Film Resistors

E12 'Preferred Value' carbon film resistors. 5% tolerance in 1/4W, 1/2W and 1W values. An economical alternative where cost is important.

Value in ohms	1/4W 10¢ ea	1/2W 15¢ ea	1W 20¢ ea	Value in ohms	1/4W 10¢ ea	1/2W 15¢ ea	1W 20¢ ea
1.0	R 1002	R 1202	R 1402	3.3k	R 1086	R 1286	R 1486
1.2	R 1004	R 1204	R 1404	3.9k	R 1088	R 1288	R 1488
1.5	R 1006	R 1206	R 1406	4.7k	R 1090	R 1290	R 1490
1.8	R 1008	R 1208	R 1408	5.6k	R 1092	R 1292	R 1492
2.2	R 1010	R 1210	R 1410	6.8k	R 1094	R 1294	R 1494
2.7	R 1012	R 1212	R 1412	8.2k	R 1096	R 1296	R 1496
3.3	R 1014	R 1214	R 1414	10k	R 1098	R 1298	R 1498
3.9	R 1016	R 1216	R 1416	12k	R 1100	R 1300	R 1500
4.7	R 1018	R 1218	R 1418	15k	R 1102	R 1302	R 1502
5.6	R 1020	R 1220	R 1420	18k	R 1104	R 1304	R 1504
6.8	R 1022	R 1222	R 1422	22k	R 1106	R 1306	R 1506
8.2	R 1024	R 1224	R 1424	27k	R 1108	R 1308	R 1508
10	R 1026	R 1226	R 1426	33k	R 1112	R 1312	R 1512
12	R 1028	R 1228	R 1428	39k	R 1114	R 1314	R 1514
15	R 1030	R 1230	R 1430	47k	R 1116	R 1316	R 1516
18	R 1032	R 1232	R 1432	56k	R 1118	R 1318	R 1518
22	R 1034	R 1234	R 1434	68k	R 1120	R 1320	R 1520
27	R 1036	R 1236	R 1436	82k	R 1122	R 1322	R 1522
33	R 1038	R 1238	R 1438	100k	R 1124	R 1324	R 1524
39	R 1040	R 1240	R 1440	120k	R 1126	R 1326	R 1526
47	R 1042	R 1242	R 1442	150k	R 1128	R 1328	R 1528
56	R 1044	R 1244	R 1444	180k	R 1130	R 1330	R 1530
68	R 1046	R 1246	R 1446	220k	R 1132	R 1332	R 1532
82	R 1048	R 1248	R 1448	270k	R 1134	R 1334	R 1534
100	R 1050	R 1250	R 1450	330k	R 1136	R 1336	R 1536
120	R 1052	R 1252	R 1452	390k	R 1138	R 1338	R 1538
150	R 1054	R 1254	R 1454	470k	R 1140	R 1340	R 1540
180	R 1056	R 1256	R 1456	560k	R 1142	R 1342	R 1542
220	R 1058	R 1258	R 1458	680k	R 1144	R 1344	R 1544
270	R 1060	R 1260	R 1460	820k	R 1146	R 1346	R 1546
330	R 1062	R 1262	R 1462	1M	R 1148	R 1348	R 1548
390	R 1064	R 1264	R 1464	1.2M	R 1150	R 1350	R 1550
470	R 1066	R 1266	R 1466	1.5M	R 1152	R 1352	R 1552
560	R 1068	R 1268	R 1468	1.8M	R 1154	R 1354	R 1554
680	R 1070	R 1270	R 1470	2.2M	R 1156	R 1356	R 1556
820	R 1072	R 1272	R 1472	2.7M	R 1158	R 1358	R 1558
1.0k	R 1074	R 1274	R 1474	3.3M	R 1160	R 1360	R 1560
1.2k	R 1076	R 1276	R 1476	3.9M	R 1162	R 1362	R 1562
1.5k	R 1078	R 1278	R 1478	4.7M	R 1164	R 1364	R 1564
1.8k	R 1080	R 1280	R 1480	5.6M	R 1166	R 1366	R 1566
2.2k	R 1082	R 1282	R 1482	6.8M	R 1168	R 1368	R 1568
2.7k	R 1084	R 1284	R 1484	8.2M	R 1170	R 1370	R 1570
				10M	R 1172	R 1372	R 1572

5 Watt Wire Wound Resistor

Wire wound resistors encased in a ceramic/cement material for greater heat dissipation characteristics. Used mostly in high powered equipment.

70¢ea

Value in ohms	Cat No.	Value in ohms	Cat No.
0.1	R 1600	68	R 1646
0.22	R 1603	82	R 1648
0.47	R 1601	100	R 1650
1.0	R 1602	120	R 1652
1.2	R 1604	150	R 1654
1.5	R 1606	180	R 1656
2.2	R 1610	220	R 1658
3.3	R 1614	270	R 1660
4.7	R 1618	330	R 1662
5.6	R 1620	390	R 1664
6.8	R 1622	470	R 1666
8.2	R 1624	560	R 1668
10	R 1626	680	R 1670
12	R 1628	820	R 1672
15	R 1630	1.0k	R 1674
18	R 1632	1.2k	R 1676
22	R 1634	1.5k	R 1678
27	R 1636	1.8k	R 1680
33	R 1638	2.2k	R 1682
39	R 1640	2.7k	R 1684
47	R 1642	3.3k	R 1686
56	R 1644	4.7k	R 1689

Metal Can Electrolytics

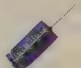
Value in uF	Volt	Cat No.	Price
1.0	63	R 4012	**$0.20**
2500	80	R 4572	**$10.95**
8000	75	R 4590	**$19.95**
8000	80	R 4592	**$24.95**

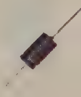
Electrolytics

Electrolytics come in a range of different shapes and sizes but (with the exception of the bipolar type) they have one thing in common: they are polarised and must be connected into the circuit correctly. As you will note, very large capacitances are possible with electrolytic types.

Axial (RT) Type

Value in uF	Volt	Cat No.	Price
1.0	350	R 4015	**$1.25**
2.2	63	R 4020	**$1.25**
3.3	25	R 4025	**$0.55**
10	63	R 4065	**$0.75**
10	80	R 4068	**$0.75**
22	25	R 4086	**$0.75**
22	63	R 4091	**$0.75**
33	16	R 4095	**$0.75**
47	25	R 4110	**$0.75**
100	10	R 4125	**$0.75**
100	63	R 4135	**$1.15**
220	16	R 4145	**$0.80**
220	25	R 4150	**$0.80**
470	63	R 4165	**$1.85**
1000	16	R 4175	**$1.95**
1000	25	R 4180	**$2.10**
1000	35	R 4185	**$2.95**
1000	63	R 4190	**$3.45**
2200	16	R 4196	**$2.50**
2200	25	R 4201	**$2.80**
2200	35	R 4206	**$4.20**
2200	50	R 4211	**$5.20**





Bipolar Electrolytics (BP or NP)

These electrolytics are specially made not to be polarised. They are designed for use where the voltage polarity across them changes; e.g. in speaker crossov ers. They are rated at 50 volts.

Value in uF	Cat No.	Price	Value in uF	Cat No.	Price
2.2	R 4600	**$0.75**	10	R 4630	**$0.95**
3.3	R 4605	**$0.75**	22	R 4640	**$1.10**
4.7	R 4610	**$0.75**	47	R 4650	**$2.25**
6.8	R 4620	**$0.95**			

Single Ended Radial (RB)

Value in UF	Volt.	Cat.No.	Price
0.47uF	50	R 4290	**$0.25**
0.47uF	100	R 4292	**$0.50**
1.0uF	50	R 4295	**$0.25**
1.0uF	100	R 4297	**$0.50**
4.7uF	25	R 4310	**$0.25**
4.7uF	80	R 4312	**$0.45**
10uF	25	R 4315	**$0.25**
10uF	63	R 4317	**$0.65**
22uF	25	R 4319	**$0.25**
22.0uF	35	R 4320	**$0.45**
22.0uF	50	R 4321	**$0.65**
33uF	16	R 4335	**$0.35**
33uF	35	R 4340	**$0.55**
47uF	25	R 4350	**$0.50**
47.0uF	63	R 4355	**$0.95**
100uF	16	R 4360	**$0.35**
100uF	25	R 4370	**$0.50**
100uF	63	R 4372	**$1.15**
220uF	16	R 4380	**$0.50**
220uF	25	R 4390	**$0.65**
220uF	63	R 4392	**$1.25**
330uF	25	R 4400	**$0.95**
470uF	10	R 4407	**$0.60**
470uF	16	R 4410	**$0.75**
470uF	25	R 4420	**$1.00**
470uF	63	R 4422	**$2.65**
680uF	16	R 4435	**$0.95**
1000uF	16	R 4440	**$1.10**
1000uF	25	R 4450	**$1.25**
1000uF	63	R 4458	**$5.40**
2200uF	16	R 4459	**$1.30**
2200uF	25	R 4460	**$2.10**
2200uF	63	R 4461	**$7.95**
5600uF	40	R 4475	**$7.95**
6800uF	10	R 4470	**$3.95**
10000uF	10	R 4480	**$4.95**
10000uF	40	R 4483	**$14.95**

Tag/Bead Tantalums

Resin dipped electrolytics which use a tantalum dielectric, giving a very low leakage but a high capacitance for the size of the package. See data section for marking codes.

Val. in uF	Volt.	Cat. No.	Price
0.1	35	R 4700	**$0.70**
0.22	35	R 4705	**$0.70**
0.33	35	R 4710	**$0.70**
0.47	35	R 4715	**$0.70**
0.68	35	R 4717	**$1.25**
1.0	35	R 4720	**$0.70**
2.2	35	R 4730	**$0.85**
3.3	35	R 4735	**$0.85**
4.7	35	R 4740	**$0.90**
6.8	35	R 4745	**$0.90**
10	25	R 4750	**$1.75**
22	16	R 4760	**$1.20**
33	10	R 4765	**$1.65**
33	16	R 4766	**$1.75**
47	6.3	R 4770	**$1.95**
100	3	R 4775	**$2.50**

Polystyrene

With a low temperature coefficient, these are ideal for use where stability is important. All are rated at 250V DC.

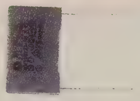
Value	Cat. No.	Value	Cat. No.	Value	Cat.No.
33pF	R 2807	120pF	R 2821	470pF	R 2835
39pF	R 2809	150pF	R 2823	560pF	R 2837
47pF	R 2811	180pF	R 2825	680pF	R 2839
56pF	R 2813	220pF	R 2877	820pF	R 2841
68pF	R 2815	270pF	R 2829	1000pF	R 2843
82pF	R 2817	330pF	R2831		
100pF	R 2819	390pF	R 2833		**$1.25ea**

1% Tolerance Polystyrene

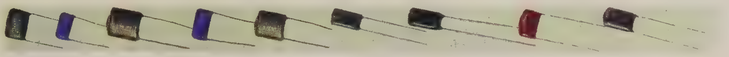
0.001uF 63V R 2780 **$1.25**

High Voltage MKT-275VAC Mains Suppression

	Cat.No.	Price
X-Class 0.01uF	Cat R 2620	**$1.35**
X-Class 0.022uF	Cat R 2622	**$1.45**
X-Class 0.033uF	Cat R 2624	**$1.55**
X-Class 0.047uF	Cat R 2626	**$1.65**
X-Class 0.1uF	Cat R 2628	**$1.95**
X-Class 0.22uF	Cat R 2630	**$2.15**
X-Class 0.33uF	Cat R 2632	**$2.55**



	Cat.No.	Price
X-Class 0.47uF	Cat R 2634	**$2.95**
Y-Class 0.0047uF	Cat R 2640	**$3.45**



100V DC Metallised Polyester Film Greencaps

Often called `greencaps' because they're usually green in colour. Polyester capacitors are the most widely used of all capacitor types. These polyester caps are all rated at 100V or more. 5% tolerance. See data section for marking codes.

Value in UF	Cat.No.	Price	Value in UF	Cat.No.	Price	Value in UF	Cat.No.	Price
0.001	R 2010	**$0.50**	0.01	R 2055	**$0.50**	0.082	R 2095	**$0.50**
0.0012	R 2012	**$0.50**	0.012	R 2057	**$0.50**	0.1	R 2100	**$0.75**
0.0015	R 2015	**$0.50**	0.015	R 2060	**$0.50**	0.12	R 2102	**$0.75**
0.0018	R 2018	**$0.50**	0.018	R 2062	**$0.50**	0.15	R 2105	**$0.75**
0.0022	R 2020	**$0.50**	0.022	R 2065	**$0.50**	0.22	R 2110	**$0.90**
0.0027	R 2027	**$0.50**	0.027	R 2067	**$0.50**	0.27	R 2115	**$0.90**
0.0033	R 2025	**$0.50**	0.033	R 2070	**$0.50**	0.33	R 2120	**$0.90**
0.0039	R 2030	**$0.50**	0.039	R 2075	**$0.50**	0.39	R 2125	**$1.00**
0.0047	R 2035	**$0.50**	0.047	R 2080	**$0.50**	0.47	R 2130	**$1.10**
0.0056	R 2040	**$0.50**	0.056	R 2085	**$0.50**	1.0	R 2135	**$2.25**
0.0068	R 2045	**$0.50**	0.068	R 2090	**$0.50**	2.0	R 2140	**$2.95**
0.0082	R 2050	**$0.50**				3.3	R 2145	**$3.95**

High Voltage Polyester (630VDC)

Similar to above range, but offering very high voltage rating. Ideal replacements for most capacitors used in valve circuits. 5% tolerance.

Value in uF	Cat.No.	Price	Value in uF	Cat.No.	Price
0.01	R 2160	**$0.95**	0.1	R 2170	**$1.95**
0.022	R 2162	**$0.95**	0.22	R 2172	**$2.25**
0.033	R 2164	**$1.45**	0.33	R 2174	**$2.50**
0.047	R 2166	**$1.50**	0.47	R 2176	**$2.50**

Plastic Film Boxed Casing MKT Capacitors

100 volt MKT caps that are of consistent size, making it easier to design and construct circuits. They also have consistent lead spacing of 5.08mm and they feature markings on the upper edge so as to make them easier to identify when mounted on the PCB.

Value in uF	Voltage	Tol	Cat.No.	Price	Value in uF	Voltage	Tol	Cat.No.	Price
0.001	100 WV	5%	Cat R 3000	**$0.50**	0.082	100 WV	5%	Cat R 3024	**$0.55**
0.0012	100 WV	5%	Cat R 3001	**$0.50**	0.1	100 WV	5%	Cat R 3025	**$0.60**
0.0015	100 WV	5%	Cat R 3002	**$0.50**	0.12	100 WV	5%	Cat R 3026	**$0.65**
0.0018	100 WV	5%	Cat R 3003	**$0.50**	0.15	100 WV	5%	Cat R 3027	**$0.70**
0.0022	100 WV	5%	Cat R 3004	**$0.50**	0.18	100 WV	5%	Cat R 3028	**$0.70**
0.0033	100 WV	5%	Cat R 3006	**$0.50**	0.22	100 WV	5%	Cat R 3029	**$0.80**
0.033	100 WV	5%	Cat R 3019	**$0.50**	0.27	100 WV	5%	Cat R 3030	**$0.90**
0.039	100 WV	5%	Cat R 3020	**$0.50**	0.33	100 WV	5%	Cat R 3031	**$1.00**
0.047	100 WV	5%	Cat R 3021	**$0.50**	0.39	100 WV	%	Cat R 3032	**$1.20**
0.056	100 WV	5%	Cat R 3022	**$0.50**	0.47	100 WV	5%	Cat R 3033	**$1.40**
0.068	100 WV	5%	Cat R 3023	**$0.50**	1.0	63 WV	10%	Cat R 3037	**$1.70**
					1.5	63 WV	10%	Cat R 3038	**$2.30**

Ceramics Capacitors

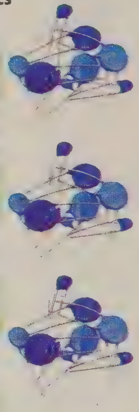
Disc Ceramics are used where low inductance is required eg. in RF circuits. All feature 5mm leg space. Values up to 100pF are NPO types.

Value	Volt	Cat.No.	Price	Value	Volt	Cat.No.	Price	Value	Volt	Cat.No.	Price
1pF	50	R 2215	**$0.20**	33pF	50	R 2247	**$0.30**	680pF	50	R 2303	**$0.30**
1.5pF	50	R 2217	**$0.20**	39pF	50	R 2249	**$0.30**	820pF	50	R 2305	**$0.30**
2.2pF	50	R 2219	**$0.20**	47pF	50	R 2251	**$0.30**	0.001uF	50	R 2307	**$0.30**
2.7pF	50	R 2221	**$0.20**	56pF	50	R 2253	**$0.30**	0.0022uF	50	R 2309	**$0.30**
3.3pF	50	R 2223	**$0.20**	68pF	50	R 2257	**$0.30**	0.0033uF	50	R 2311	**$0.30**
3.9pF	50	R 2225	**$0.20**	82pF	50	R 2259	**$0.30**	0.0047uF	50	R 2313	**$0.30**
4.7pF	50	R 2227	**$0.20**	100pF	50	R 2285	**$0.30**	0.0056uF	50	R 2315	**$0.30**
5.6pF	50	R 2229	**$0.20**	120pF	50	R 2287	**$0.30**	0.0068uF	50	R 2317	**$0.30**
6.8pF	50	R 2231	**$0.20**	150pF	50	R 2289	**$0.30**	0.0082uF	50	R 2319	**$0.30**
8.2pF	50	R 2233	**$0.20**	180pF	50	R 2291	**$0.30**	0.01uF	50	R 2321	**$0.30**
10pF	50	R 2235	**$0.20**	220pF	50	R 2293	**$0.30**	0.022uF	50	R 2323	**$0.30**
12pF	50	R 2237	**$0.20**	270pF	50	R 2295	**$0.30**	0.033uF	50	R 2325	**$0.30**
15pF	50	R 2239	**$0.20**	330pF	50	R 2296	**$0.30**	0.047uF	50	R 2327	**$0.30**
18pF	50	R 2241	**$0.30**	390pF	50	R 2297	**$0.30**	0.1uF	50	R 2360	**$0.75**
22pF	50	R 2243	**$0.30**	470pF	50	R 2299	**$0.30**	0.22uF	25	R 2370	**$0.75**
27pF	50	R 2245	**$0.30**	560pF	50	R 2301	**$0.30**				

Capacitors & Transistors

High Voltage Disc Ceramics

Rated at 3KV DC.

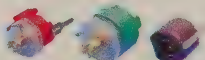


Value	Cat No.	Price
100pF	R 2375	$2.60
120pF	R 2376	$2.60
150pF	R 2378	$2.60
180pF	R 2380	$2.60
220pF	R 2381	$2.60
270pF	R 2382	$2.60
320pF	R 2383	$2.60
390pF	R 2384	$2.75
470pF	R 2386	$2.75
560pF	R 2387	$2.85
680pF	R 2388	$2.85
820pF	R 2389	$2.95
0.001uF	R 2390	$2.95
0.0022uF	R 2392	$2.95
0.0033uF	R 2393	$2.95
0.0047uF	R 2394	$3.20
0.0056uF	R 2395	$3.50
0.0068uF	R 2396	$3.75
0.0082uF	R 2398	$3.95
0.01uF	R 2400	$4.25

Monolithic Multilayer Ceramic Capacitors

Ideal for by-pass applications such as in power supplies and computer boards. They provide excellent stability in a small package.

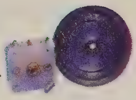
Value	Voltage	Temp	Cat. No	Price
10pF	50	NPO	R 1981	$0.40
15pF	50	NPO	R 1982	$0.40
22pF	50	NPO	R 1983	$0.40
33pF	50	NPO	R 1984	$0.40
47pF	50	NPO	R 1985	$0.40
68pF	50	NPO	R 1986	$0.40
100pF	50	NPO	R 1987	$0.40
120pF	50	NPO	R 1988	$0.40
150pF	50	NPO	R 1989	$0.40
220pF	50	NPO	R 1990	$0.40
330pF	50	NPO	R 1991	$0.40
470pF	50	NPO	R 1994	$0.40
680pF	50	NPO	R 1995	$0.40
1000pF	50	NPO	R 1996	$0.40
1500pF	50	X7R	R 1997	$0.40
2200pF	50	X7R	R 1998	$0.40
3300pF	50	X7R	R 1999	$0.40
4700pF	50	X7R	R 2002	$0.40
6800pF	50	X7R	R 2003	$0.45
0.01uF	50	X7R	R 2000	$0.50
0.015uF	50	X7R	R 2004	$0.50
0.022uF	50	X7R	R 2005	$0.50
0.033uF	50	X7R	R 2006	$0.50
0.047uF	50	X7R	R 2007	$0.50
0.068uF	50	X7R	R 2008	$0.50
0.1uF	50	X7R	R 2001	$0.60
0.15uF	50	Z5U	R 2180	$0.60
0.22uF	50	Z5U	R 2181	$0.60
0.33uF	50	Z5U	R 2182	$0.70
0.47uF	50	Z5U	R 2183	$0.70
0.68uF	50	Z5U	R 2184	$0.70
1.0uF	25	Z5U	R 2185	$0.95



Trimmer Capacitors

Range	Cat.No.	Price	Colour Code
9.8-60pF	R 2930	$2.95	Brown
3-27pF	R 2935	$2.95	Red
1.8-22pF	R 2940	$2.95	Green

Variable Tuning Gang Capacitor

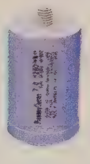


Used in AM receivers and transistor radio circuits.

Range: 60-160pF
Body Size: 20.2 x 20 x 10.5
Knob Diameter: 35.7mm
Cat R 2970

$3.95

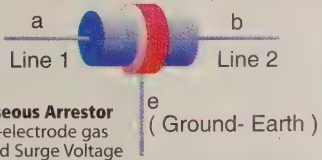
High Discharge Capacitor



Suits heavy discharge currents circuits e.g. strobes. Includes in-built discharge resistor. Non-polarised.

Value: 7.0uF
Voltage: 250VAC
Cat R 2857

$9.95



Gaseous Arrestor

A 3-electrode gas filled Surge Voltage Protector to reduce the effects of lightning strikes on phones and modems etc.

Cat R 1804

$12.95

Metal Oxide Varistors

Max Operating Voltage: 275VAC
Pulse Energy Rating: 20 joules
Peak Pulse Current: 2000 Amps
Device Types: VE17M0275K, TNR15G321K, IN140431.
Cat R 1802

$5.95

General Purpose NTC Thermister

A Negative Temperature Coefficient sensor used in amplifiers and power supplies for temperature sensing and feedback.

Resistance @ 25°C = 100k with a -5.2% Change per °C. Thermal Time Constant = 17 seconds. Max. Dissipation = 0.5 Watt. Rating = 25/+125°C.

Cat R 1797

$2.95

1.0 Farad Double Layer

Compact Super Capacitor known as "supercap" or "Dynacap", this is a high capacitance, low leakage, low ESR electrolytic capacitor used primarily in memory backup electronic equipment.

Rating: 1.0 Farad 5.5VDC
ESR @ 1kHz: 30Ω LC 315uA
Cat R 4900

$19.95

Bipolar

Description		Cat no.	Price
BC327	PNP Signal	Z 2240	$0.35
BC328	PNP Signal	Z 2242	$0.35
BC337	NPN Signal	Z 2190	$0.35
BC338	NPN Signal	Z 2252	$0.35
BC546	NPN Signal	Z 1350	$0.30
BC547	NPN Signal	Z 1300	$0.30
BC548	NPN Signal	Z 1308	$0.30
BC549	NPN Signal	Z 1319	$0.30
BC549C	NPN Signal	Z 1329	$0.25
BC556	PNP Signal	Z 1352	$0.45
BC557	PNP Signal	Z 1340	$0.30
BC558	PNP Signal	Z 1348	$0.30
BC559	PNP Signal	Z 1359	$0.35
BC639	NPN Audio O/P	Z 1388	$0.75
BC640	PNP Audio O/P	Z 1389	$0.75
BD139	NPN Power Amp	Z 1443	$1.45
BD140	PNP Power Amp	Z 1444	$1.55
BD681	NPN Darlington	Z 1462	$2.35
BF173	NPN VHF Signal	Z 1562	$2.25
BF469	NPN Hi-Volt Power	Z 1635	$2.25
BF470	PNP Hi-Volt Power	Z 1636	$2.00
BFR91	NPN UHF Signal	Z 1691	$2.95
BUX80	NPN Hi-Volt Power	Z 2150	$4.95
MPSA14	NPN Darlington	Z 2086	$0.55
MPSA65	PNP Darlington	Z 2088	$0.55
MJE340	NPN Power	Z 2010	$2.25
MJE350	PNP Power	Z 2012	$2.25
MJ2955	PNP Power	Z 1800	$3.95
MJE2955T	PNP Power	Z 2005	$3.85
MJE3055T	NPN Power	Z 2008	$3.85
MJ10012	NPN Darlington	Z 1805	$12.95
MJ15003	NPN Power Amp.	Z 1808	$9.95
MJ15004	PNP Power Amp.	Z 1810	$11.00
PN100	NPN Small Signal	Z 1000	$0.40
PN200	PNP Small Signal	Z 2000	$0.50
PN2907	PNP Hi Speed Sw.	Z 2065	$0.55
PN3563	NPN Small Signal	Z 2180	$0.80
PN4258	PNP Saturated Sw.	Z 2326	$1.25
TIP127	PNP Darlington	Z 2035	$1.50
TIP31B/C	NPN Power	Z 2020	$2.50
TIP32B/C	PNP Power	Z 2024	$2.50
2N2222	NPN Hi-Speed Sw.	Z 2069	$0.65
2N3019	NPN HF Amp	Z 2068	$2.45
2N3055	NPN Power Amp.	Z 1804	$3.95
2N3771	NPN Power	Z 1910	$4.95
2N3904	NPN Low Level Amp.	Z 2070	$0.40
2N3948	NPN RF Power	Z 2260	$1.25
2N4427	NPN RF Power	Z 2506	$2.95
2N5401	PNP Hi Volt Switch	Z 1900	$0.50
2SC710	NPN HF Signal	Z 2512	$0.75
2SC3355	NPN 6.5GHz Signal	Z 6006	$0.95

For full specifications see our DATA SECTION (from page 230).

FETs, MOSFETS

Description	Type	Function	Cat No.	Price
MPF102	N-Ch	Junction RF-VHF Amp	Z 1832	$2.00
MPF106	N-Ch	Junction RF-VHF Amp	Z 1840	$0.50
2N5484	N-Ch	Junction RF-VHF Amp	Z 2340	$1.75
2N5486	N-Ch	Junction RF-VHF Amp	Z 2073	$2.25
MTP/RFP3055E	N-Ch	60V 12A Power TMOS	Z 2132	$3.95
BUZ71A	N-Ch	50V 14A Switch SIPMOS	Z 1850	$4.95
IRF520	N-Ch	100V 8A Switch HEXFET	Z 1860	$4.95
VN10KM	N-Ch	60V 1A Pulsed 0.31A **MOSFET	Z 1820	$3.95
BUK456-60A/H	N-Ch	60V 52A Switch MOSFET	Z 1852	$6.95
BUK457-600B	N-Ch	60V 8A Switch MOSFET	Z 1854	$9.95
2SK1068	N-Ch	160V 7A Power MOSFET	Z 1822	$19.95
2SJ162	N-Ch	160V 7A Power MOSFET	Z 1824	$9.95

Signal Diodes

		Cat No	Price Each
75V 200mA Silicon	1N914A, 1N4148 etc	Z 3120	**$0.20**
25V 110mA Gold Bonded Germanium	OA47	Z 3232	**$2.95**
40V 50mA Point Contact AM Signal Detector, Germanium	1N60/1K60	Z 3040	**$0.70**
Schottky Hot Carrier	5082-2800 etc.	Z 3230	**$3.65**
Silicon Vari-Cap	BB212	Z 3125	**$5.75**

Rectifiers Diodes

1A 400V Diode	1N4004 etc.	Z 3204	**$0.20**
1A 1000V Diode	IN4007 etc	Z 3207	**$0.25**
3A 400V Diode	IN5404 etc	Z 3222	**$0.50**
3A 1000V Diode	IN5408 etc	Z 3228	**$0.70**
6A 1000V Diode	P600M etc.	Z 3229	**$2.00**
7A 400V 450ns Fast Diode	BY229/400	Z 3241	**$4.95**

Bridge Diodes

1.5A 400V Bridge	WO-4 etc.	Z 3304	**$1.20**
6A 400V Bridge	PO-4 etc.	Z 3306	**$3.95**
1.5A 600V Bridge	WO6	Z 3307	**$1.55**
1.5A 600V Bridge	DB155G	Z 3300	**$1.35**
2A 600V Bridge	2W06	Z 3308	**$1.50**
8A 400V Bridge	KPBC804	Z 3333	**$4.95**
35A 400V Bridge	KBPC3504 etc	Z 3336	**$9.95**
25A 800V Bridge	KBPC2508	Z 3335	**$10.95**
50A 600V Bridge	FB5006	Z 3350	**$19.95**
4A 100V SIL Bridge	KBL407	Z 3310	**$4.95**

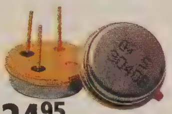
Zener Diodes

	400mW Type	Cat No	Price Each		1W Type	Cat No	Price Each
3.3V	1N746	Z 3401	**$0.40**	4.7v	1N4732	Z 3523	**$0.55**
4.7V	1N750	Z 3403	**$0.40**	5.1v	1N4733	Z 3525	**$0.55**
5.1V	1N751	Z 3405	**$0.40**	5.6v	1N4734	Z 3527	**$0.55**
5.6V	1N752	Z 3407	**$0.40**	6.2v	1N4735	Z 3529	**$0.55**
6.2V	1N753	Z 3409	**$0.40**	6.8v	1N4736	Z 3531	**$0.55**
6.8V	1N957	Z 3411	**$0.40**	7.5v	1N4737	Z 3533	**$0.55**
7.5V	1N755	Z 3412	**$0.20**	8.2v	1N4738	Z 3535	**$0.55**
8.2V	1N756	Z 3414	**$0.40**	9.1v	1N4739	Z 3537	**$0.55**
9.1V	1N757	Z 3416	**$0.40**	10v	1N4740	Z 3539	**$0.55**
10V	1N961	Z 3413	**$0.40**	12v	1N4742	Z 3543	**$0.55**
12V	1N963	Z 3415	**$0.40**	15v	1N4744	Z 3547	**$0.55**
15V	1N965	Z 3417	**$0.40**	16v	1N4745	Z 3549	**$0.55**
18V	1N967	Z 3419	**$0.20**	18v	1N4746	Z 3551	**$0.55**
	1W Type	**Cat No**	**Price Each**	20v	1N4747	Z 3553	**$0.55**
				24v	1N4749	Z 3557	**$0.55**
3.3v	1N4728	Z 3515	**$0.55**	30v	1N4751	Z 3561	**$0.55**
3.9v	1N4730	Z 3519	**$0.55**	33v	1N4752	Z 3563	**$0.55**

304.0 MHz SAW Resonator

Surface Acoustic Wave Resonator as used in wireless alarm transmitters, oscillators etc.

Cat Z 2773



$24.95

Unijunctions/Diacs

		Cat. No.	Price
Programmable Unijunction	2N6027/D13T1	Z 1780	**$1.00**
Diac	BR100 etc	Z 4710	**$2.00**

Voltage Regulator ICs

				Cat No	Price
LM304	0V to -40V	25mA	10-Pin CAN	Z 6546	**$0.95**
LM317K	+1.2V to +37V	1.5A	TO-3	Z 6542	**$13.95**
LM317T	+1.2V to +37V	1.5A	TO-220	Z 6541	**$3.00**
LM337T	-1.2V to 37V	1.5A	TO-220	Z 6058	**$4.90**
LM2941CT	+1.2V to +32V	1.5A	TO-220	Z 6620	**$5.95**
LM350T	+1.2V to +32V	3A	TO-220	Z 6561	**$12.95**
LM723	+2.0V to +37V	150mA	14-pinDIL	Z 6362	**$2.95**
78L05Z	+5V	100mA	TO-92	Z 6108	**$1.95**
7805CT	+5V	1A	TO-220	Z 6545	**$1.95**
7808CT	+8V	1A	TO-220	Z 6553	**$2.95**
LM7809CT	+9V	1A	TO-220 Plastic	Z 6550	**$1.95**
78L12Z	+12V	100mA	TO-92	Z 6110	**$1.95**
7812CT	+12V	1A	TO-220	Z 6552	**$1.95**
78L15Z	+15V	100mA	TO-292	Z 6111	**$1.95**
7815CT	+15V	1A	TO-220	Z 6554	**$1.95**
7905CT	-5V	1A	TO-220	Z 6555	**$1.95**
7912CT	-12V	1A	TO-220	Z 6556	**$1.95**
7915CT	-15V	1A	TO-220	Z 6557	**$1.95**
LM2940T-5	+5V	1A	TO-220	Z 6600	**$4.95**
LM2940T-9	+9V	1A	TO-220	Z 6602	**$5.95**
LM2940T-12	+12V	1A	TO-220	Z 6606	**$5.95**
LM7824CT	+24V	1A	TO-220	Z 6547	**$2.95**

Comparators

		Pins	Cat No	Price
LM 311	General Purpose Single	8	Z 6048	**$1.55**
LM 319	High Speed Dual	14	Z 6049	**$5.95**
LM 339	Ultra Low Power Quad	14	Z 6039	**$1.60**
LM 393	Dual Comparator	8	Z 6087	**$1.50**

Power Amplifiers ICs

LM 380N	2.5W - 5W Audio Amp	14	Z 6080	**$4.95**
LM 383T	7W Audio Amp TO-220	5	Z 6085	**$6.95**
LM386N	1.6WLow Volt.Amp	8	Z 6086	**$2.95**
LM 1875T	20W Low Distortion Amp TO - 220	5	Z 6115	**$14.95**
TDA2822M	1W Stereo Amp	8	Z 6070	**$4.95**

Timers

NE555/LM555 CN	Single 555.TTL	8	Z 6145	**$1.25**
TL555CP/ICM7555	Single 555, CMOS	8	Z 6144	**$2.25**
NE556/LM556 CN	Dual 555 TTL	14	Z 6146	**$2.60**

Radio/TV/RF

OM350	Wideband Hybrid Amp 18dB 860MHz SIP	5	Z 6185	**$24.95**
MK484	AM Radio Receiver, TO-92	3	Z 6525	**$1.75**
MC1377	PAL/NTSC Colour Encoder	20	Z 6530	**$5.95**
MC10116E	Triple VHF ECL Differential Amp	16	Z 5415	**$2.95**
BA1404	FM Stereo Transmitter	18	Z 6019	**$9.95**
UPC1688G	1GHz Wideband Amp, SMD	4	Z 6011	**$4.95**

SCRs and Triacs

					Cat No	Price Each
0.8A	200V	TO92	Sensitive Gate SCR	PO103 _ _, C103B, TS0820-20, etc	Z 4310	**$1.95**
4A	400V	TO202	Sensitive Gate SCR	C 106D, TYN404, etc	Z 4320	**$2.20**
8A	500V	TO202	SCR	C122E etc	Z 4332	**$4.95**
6A	400V	TO220	TRIAC	SC141D, BTB06-400BW, etc	Z 4510	**$3.95**
15A	400V	TO220	TRIAC	SC151D, BTB16-400BW, etc	Z 4520	**$6.95**

Due to continued product development, specifications may change without prior notice.

Note: Various Manufacturers' Codes may differ from Each Other.

Other Linear Devices

		Pins	Cat No	Price Each
LM334Z	Adjustable Current Source 1uA-10MA TO-92	3	Z 6810	$5.75
LM335H	Precision Temperature Sensor TO-46	3	Z 6050	$7.25
LM335Z	Precision Temperature Sensor TO-92	3	Z 6051	$5.75
LM336Z	2.5V Adjustable Reference TO-46	3	Z 6055	$3.65
LM394	2 Supermatched NPN Transistors	8	Z 6083	$9.95
NE567	PLL type Tone Detector	8	Z 6167	$3.65
DAC0800	8-bit D-A Converter	16	Z 6834	$8.30
ADC0802	8-bit A-D Converter	20	Z 6833	$14.95
XR2206	Waveform/Function Generator	16	Z 6820	$14.95
XR2211	PLL/FSK Decoder	14	Z 2511	$4.95
LM2917N	Frequency to Voltage Converter	14	Z 6112	$6.50
LM3046	5 Monolithic NPN Transistor Array	14	Z 6107	$4.95
LM3909	LED Driver/Flasher/Oscillator	8	Z 6109	$2.95
LM3914	LED Dot/Bar Linear Display Driver	18	Z 6295	$9.95
LB1412	12 Dot LED Driver with Peak Hold	22	Z 6291	$14.95
A78S40	Switchmode Power Supply Controller	16	Z 6840	$4.95

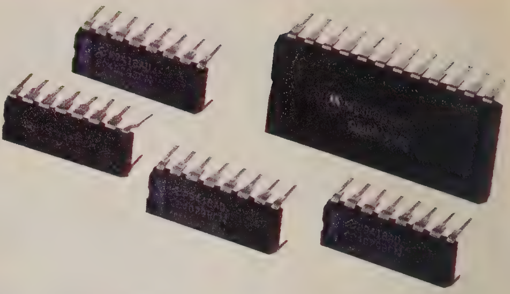
74 Series TTL
(Supply = + 5V)

		Pins	Cat. No.	Price Each
7490	Decade Counter	14	Z 5210	$0.95

74LS Series Low Power Schottky
(Supply = + 5V)

		Pins	Cat. No.	Price Each
74LS00	Quad 2-input NAND	14	Z 4900	$0.95
74LS04	Hex Inverter	14	Z 4904	$0.95
74L505	Hex Inverter D/C Output	14	Z 4905	$0.95
74LS08	Quad 2-input AND	14	Z 4908	$0.95
74LS10	Triple 3-input NAND	14	Z 4910	$0.95
74LS11	Triple 3-input AND	14	Z 4912	$0.95
74LS13	Dual 4-input NAND Schmitt Trigger	14	Z 4913	$0.95
74LS14	Hex Schmitt Inverter	14	Z 4914	$0.95
74LS20	NAND Dual 4 Input +ve	14	Z 4920	$0.50
74LS37	Quad 2-input NAND Buffer	14	Z 4937	$0.50
74LS73	Dual J/K Flip Flop ve Edge Triggered	14	Z 4973	$0.95
74LS75	4-Bit Bistable Latch	16	Z 4975	$0.95
74LS83	4-Bit Binary Adders with Fast Carry	16	Z 4983	$1.85
74LS85	4-Bit Magnitude Comparator	16	Z 4985	$0.95
74LS90	Decade Counter	14	Z 4990	$0.95
74LS123	Retriggerable Monostable Multivibrator	16	Z 5310	$2.30
74LS138	3 Line to 8 Decoder/Demultiplexer	16	Z 5284	$0.95
74LS153	Dual 1 of 4 Line Data Sel/Multiplexer	16	Z 5286	$0.95
74LS190	Up/Down Decade Counter	16	Z 4999	$0.95
74LS193	BCD Up/Down Counter, Dual Clock	16	Z 5193	$0.95
74LS196	Decade Divider	14	Z 5196	$1.25
74LS221	Dual Monostable M/Vib. Schmitt Input	16	Z 5296	$1.75
74LS244	Octal 3-state Buffer/Line Driver	20	Z 5294	$1.75
74LS367	Hex 3-state Buffer	16	Z 5292	$0.95
74LS374	Octal 3-state Flip Flop +ve Edge Trig.	20	Z 5297	$1.75

Anti-Static Foam to Suit ICS
125 x 125mm Cat H 1737 **$1.95**



74C Series CMOS
(Supply = +3V to +15V)

		Pins	Cat. No.	Price Each
74HC00	Quad 2-input +ve NAND	14	Z 5410	$0.95
74C00/40106	Hex Schmitt Trigger/Inverter	14	Z 5413	$2.30
74C175/40175	Quad D Flip Flop	16	Z 5695	$1.95
74C926	4-digit Counter with 7 seg Driver	18	Z 5414	$17.75

74HC Series High-Speed CMOS
(Supply = +2V to +6V)

		Pins	Cat. No.	Price Each
74HC00	Quad 2-input +ve NAND	14	Z 5800	$0.95
74HC02	Quad 2-input NOR	14	Z 5802	$0.95
74HC05	Hex Inverter Open Drain		Z 5805	$0.95
74HC04	High Speed Hex Inverter	14	Z 5804	$0.95
74HC08	Quad 2-input AND	14	Z 5808	$0.95
74HC10	Triple 3-input NAND	14	Z 5810	$0.50
74HC11	Triple 3-input AND	14	Z 5811	$1.25
74HC14	Hex Schmitt Trigger-Inverter	14	Z 5814	$1.35
74HC27	Triple 3-input NOR	14	Z 5827	$1.25
74HC30	8-input +ve NAND	14	Z 5830	$1.25
74HC32	Quad 2-input NOR	14	Z 5832	$0.95
74HC74	Dual- D Flip Flop, +ve Edge Triggered	14	Z 5874	$1.25
74HC85	4-bit Magnitude Comparator	16	Z 5885	$2.45
74HC86	Quad 2-input Exclusive OR	14	Z 5886	$2.00
74HC123	Dual Retriggerable Monostable	16	Z 5910	$3.95
74HC138	3 to 8 Line Decoder/Demultiplexer	16	Z 5915	$1.60
74HC139	Dual 2 to 4 Decoder/Demultiplexer	16	Z 5920	$1.60
74HC154	4 to 16 Decoder/Demultiplexer	24	Z 5924	$3.95
74HC157	Quad 2 to 1 Multiplexer	16	Z 5925	$2.60
74HC161	Presettable 4-bit Binary Counter	16	Z 5929	$2.95
74HC165	8-bit Parallel-Serial Shift Register	16	Z 5930	$2.95
74HC174	Hex D Flip Flop with Clear	16	Z 5935	$2.95
74HC221	Dual Monostable M/Vib. Schmitt Input	16	Z 5940	$0.95
74HC240	Octal Tri-state Inverting Buffer	20	Z 5945	$1.95
74HC244	Octal Tri-state Buffer/Line Driver	20	Z 5950	$1.95
74HC245	Octal Tri-state 2-way Buffer	20	Z 5955	$2.30
74HC367	Hex Bus Tri-state Buffer	20	Z 5960	$1.95
74HC373	Octal Tri-state D-type latch	20	Z 5965	$2.95
74HC595	8-Bit Serial – Parallel	16	Z 5982	$3.95
74HC4066	Quad Bilat. Analog 5W	14	Z 5990	$2.50

Static Charges

Please take care in handling all semiconductors as static charges could damage or shorten the lifespan of the component.

4000 Series CMOS Logic (Supply = +3 to +15V)

		No. Pins	Cat. No.	Price Each
4001	Quad 2-input NOR	14	Z 5601	**$0.95**
4002	Dual 4-input NOR	14	Z 5602	**$0.95**
4007	Dual Complementary Pair & Inverter	14	Z 5607	**$1.95**
4009	Hex Inverting Buffer	16	Z 5609	**$1.80**
4011	Quad 2-input NAND	14	Z 5611	**$1.00**
4012	Dual 4-input NAND	14	Z 5612	**$1.00**
4013	Dual D-Edge Triggered Flip Flop	14	Z 5613	**$1.25**
4015	Dual 4-bit Shift Register	16	Z 5615	**$2.25**
4016	Quad Bi-Lateral Switch	14	Z 5616	**$1.75**
4017	5 Stage Decade Counter/Divider	16	Z 5617	**$1.95**
4019	Quad AND/OR Select Gate	16	Z 5619	**$1.95**
4020	14-stage Binary Ripple Counter	16	Z 5620	**$2.50**
4021	8-bit Shift Register	16	Z 5621	**$2.75**
4022	1 of 8 counter	16	Z 5622	**$2.40**
4023	Triple 3-input NAND	14	Z 5623	**$1.20**
4024	7-bit Binary Ripple Counter	14	Z 5624	**$1.95**
4025	Triple 3-input NOR	14	Z 5625	**$2.35**
4026	Decade-counter, 7-seg Output Driver	16	Z 5626	**$3.50**
4027	Dual J/K Flip Flop	16	Z 5627	**$1.60**
4028	4-bit BCD to 1-of-10 Decoder	16	Z 5628	**$0.95**
4029	4-bit Bin/BCD U/D Parallel-In Counter	16	Z 5629	**$2.70**
4030	Quad Exclusive OR Gate	14	Z 5630	**$1.55**
4040	12-stage Binary Ripple Counter	16	Z 5640	**$1.80**
4044	Quad R/S Latch, Open Collector Output	16	Z 5644	**$2.00**
4046	Phase Locked Loop	16	Z 5646	**$2.95**
4047	Mono/Astable Multivibrator	14	Z 5647	**$1.55**
4049	Hex Inverting Buffer	16	Z 5649	**$1.50**
4050	Hex Non-Inverting Buffer	16	Z 5650	**$1.35**
4051	8-channel Analog Switch	16	Z 5651	**$2.10**
4066	Quad Bilateral Analog Switch	14	Z 5666	**$1.50**
4067	16 Chan Analogue Multiplexer	24	Z 5667	**$2.50**
4068	8 input NAND Gate	14	Z 5668	**$1.10**
4069	Hex Inverter	14	Z 5669	**$1.00**
4071	Quad 2-input OR	14	Z 5671	**$1.25**
4073	TRIPLE 3-input and Gate	14	Z 5673	**$1.20**
4081	Quad 2-input Buffered AND	14	Z 5681	**$1.20**
4082	Dual 4-input AND	14	Z 5682	**$1.50**
4093	Quad 2-input NAND Schmitt Trigger	14	Z 5693	**$1.10**
4094	8 Stage Shift and Store Register	16	Z 5692	**$2.75**
4501	Triple Gate NAND-NOR-AND	16	Z 5721	**$2.95**
4511	BCD to 7 Segment Latch Decoder Drives	16	Z 5730	**$2.30**
4512	8 Channel Multiplexer	16	Z 5732	**$2.75**
4516	Binary Up/Down Counter Dual 4 Input	16	Z 5738	**$3.65**
4517	Dual 56 Bit Shift Register	16	Z 5739	**$0.50**
4518	Dual BCD Up-Counter	16	Z 5740	**$2.95**
4520	Dual Binary Up-Counter, Divide by 1	16	Z 5742	**$2.00**
4526	4 Bit Prog Down Counter	16	Z 5744	**$0.95**
4528	Dual Monostable Multivibrator	16	Z 5748	**$2.20**
4538	Dual Monostable Multivibrator	16	Z 5758	**$2.85**
4541	16-Stage Binary Counter	14	Z 5760	**$3.55**
4584	Hex Schmitt Trigger	14	Z 5767	**$1.95**
40194	4 Bit Bi directional Shift Register	16	Z 5694	**$1.95**

Operational Amplifiers (OP-AMPs)

		No. Pins	Cat. No.	Price Each
LM10CLN	Low Voltage Comp. with reference	8	Z 6084	**$4.95**
TL071CP	G.P. JFET/Bipolar Compensated	8	Z 6030	**$2.90**
TL072CP	Dual G.P. JFET/Bipolar Compensated	8	Z 6032	**$3.95**
TL074CP	Quad G.P. JFET/Bipolar Compensated	14	Z 6034	**$3.80**
TL084	Quad BIFET	14	Z 6062	**$3.55**
TLC251	Low Voltage/Power CMOS Compensated	8	Z 6021	**$9.95**
LM301AN	General Purpose Uncompensated	14	Z 6040	**$1.85**
LM308N	Precision Uncompensated (uA308TC)	14	Z 6045	**$2.95**
LM324N	Quad Low Power Compensated	14	Z 6102	**$1.20**
LM358N	Dual Low Power Compensated	8	Z 6029	**$1.25**
LM614	Quad G.P. Compensated with Adjustable Reference	16	Z 6375	**$4.95**
LM741/LF351	General Purpose Compensated	8	Z 6382	**$1.55**
LM833N	Dual Low Noise Hi-Fi Audio Compensated	8	Z 6088	**$5.95**
LM1458N	Dual General Purpose Compensated	8	Z 6028	**$1.90**
CA3080	Transconductance Single	8	Z 6024	**$5.75**
CA3130T	MOSFET/CMOS Uncompensated Single (TO5)	8	Z 6025	**$9.95**
LM3900N	Norton Quad (Current Differencing)	14	Z 6100	**$2.70**
NE5534AP	Low Noise, High Output Compensated	8	Z 6090	**$4.35**
LM13600N	Dual Transconductance with Buffers	16	Z 6113	**$5.50**
LM627	Precision Low Noise	8	Z 6023	**$9.95**

RAM & ROM

			Cat. No.	Price Each
2732A	4K x 8 EPROM	250nS	Z 9209	**$9.95**
27C256-12	32K x 8 EPROM	120nS	Z 9355	**$12.95**
27C512-12	64K x 8 EPROM	120nS	Z 9358	**$16.95**

Special Function IC's

		No. Pins	Cat. No.	Price Each
MAX 232	RS-232 Tx/Rx I.C. (only +5V supply required	16	Z 5369	**$14.95**
DS 1488	Quad RS232 Line Driver MC1488 etc	14	Z 5370	**$1.95**
DS 1489	Quad RS232 Line Receiver MC1489 etc	14	Z 5371	**$1.95**
PSC-16550	AFN UART with Baud Generator for 386/486	40	Z 9117	**$19.95**
UA 9667PC	HEX Darlington Driver IC ULN2003 etc	16	Z 5380	**$2.95**
MC10116L	ECL Triple Diff. Line Receiver	16	Z 5415	**$4.70**
MC145026P	(SC41342P) 9-bit Trinary Security Encoder	16	Z 5425	**$14.60**
MC145028P	(SC41344P) 9-bit Trinary Security Decoder	16	Z 5430	**$9.95**
MC145436P	DTMF Decoder	14	Z 5460	**$19.85**
UM3561A	Siren/sound Generator	8	Z 6203	**$4.75**
UGN3503U	Hall Effect Sensor	3	Z 2620	**$4.50**
ISD1416P	16 Second Recorder IC	28	Z 8000	**$19.95**
SAB6456	1GHz Prescaler IC	8	Z 9125	**$7.95**
Z 80A	4MHz 8-bit CPU	8	Z 9100	**$3.95**

Crystals

	Case Type	Res'nce Type	Cat No	Price Each
38 kHz suit watches, BA1404, BA1404F XMit I.C.,etc.	HC-13/U	Parallel	*Z 6018	**$1.95**
3.579545 MHz "TV Colour Burst", suit MC145436 DTMF Decoders,	HC-49/U	Parallel	Z 6031	**$5.95**
4.0 MHz General Purpose suit Inverters, VCRs, T.V.Pattern	HC-49/U	Parallel	Z 9900	**$5.95**
10.0 MHz General Purpose suit 8008, 8086, 8088, etc.	HC-49/U	Parallel	Z 9910	**$5.95**

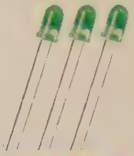
***Limited stocks available**

LED & Photo Transducers

3mm Round Premium Quality

Emitted Colour	Cat No.	Price
Red	Z 4077	**$0.55**
Green	Z 4079	**$0.55**
Yellow	Z 4081	**$0.55**
Orange	Z 4083	**$0.55**

5mm Round Premium Quality

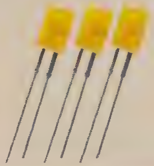


Emitted Colour	Cat No.	Price
Red	Z 4085	**$0.65**
Green	Z 4087	**$0.65**
Yellow	Z 4089	**$0.65**
Orange	Z 4091	**$0.65**
Blue (Milky Lens)	*Z 4005	**$2.95**

10mm Round Premium Quality

Emitted Colour	Cat No.	Price
Red	Z 4060	**$2.00**
Green	Z 4061	**$2.00**
Yellow	Z 4062	**$2.00**

2mm x 5mm Rectangular Premium Quality



Emitted Colour	Cat No.	Price
Red	Z 4093	**$0.65**
Green	Z 4095	**$0.65**
Yellow	Z 4097	**$0.65**

***Limited stocks available**

High Intensity LEDs

Emitted Colour	Lens Size	Type	Intensity	0 1/2	Cat No	Price
Red	5mm	Clear	1000mcd	12 degree	Z 4072	**$1.25**
Ruby Red	5mm	Clear	3600mcd	12 degree	Z 4074	**$1.75**
Sunset Red	5mm	Clear	8000mcd	15 degree	Z 4031	**$4.95**
Red	10mm	Clear	3000mcd	30 degree	Z 4066	**$3.25**
Red	10mm	Clear	6000mcd	12 degree	Z 4067	**$3.95**
Yellow	5mm	Clear	5000mcd	8 degree	Z 4009	**$3.25**
Amber Yellow	5mm	Clear	6500mcd	15 degree	Z 4033	**$3.95**
Green	5mm	Clear	2200mcd	30 degree	Z 4008	**$8.95**
Green	5mm	Clear	6000mcd	15 degree	Z 4011	**$9.95**
Blue	5mm	Clear	650mcd	30 degree	Z 4006	**$8.95**
Blue	5mm	Clear	1000mcd	24 degree	Z 3900	**$9.95**
White	5mm	Clear	1100mcd	50 degree	Z 4003	**$9.95**
White	5mm	Clear	4000mcd	20 degree	Z 4004	**$9.95**

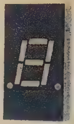
Special Function LEDs

Blue	5mm	Clear	7mcd	Z 4092	**$3.95**
Blue	5mm	Diffused	3mcd	Z 4005	**$2.95**
Red Flashing 3V	5mm	Diffused	30mcd	Z 4040	**$2.50**
Red Flashing12V	5mm	Diffused	280mcd	Z 4044	**$3.50**
Green Flashing 12V	5mm	Diffused	69mcd	Z 4046	**$3.50**
Red & Green	5mm	Milk White	45/11mcd	Z 4071	**$1.45**

Panel & Bar Graph Indicators

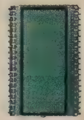
Red, 2mm Dot, Cylindrical	Z 4190	**$0.50**
Green, 2mm Dot, Cylindrical	Z 4192	**$0.50**
Red, 3mm Dot, Cylindrical	Z 4194	**$0.55**
Green, 3mm Dot, Cylindrical	Z 4196	**$0.55**
Red , 10 Segment Bargraph, Vertical	Z 4180	**$5.45**
Green, 10 Segment Bargraph, Vertical	Z 4182	**$5.45**
Green, 7 Segment Bargraph, Horizontal	Z 4184	**$4.95**

7 Segment LED Display



Digit Size and Colour	Common Anode	Cat No.	Price
7.6mm Red	LT312	Z 4117	**$1.95**
13.2mm Red	LTS546	Z 4145	**$4.95**
	Common Cathode		
7.6mm Red	LT313	Z 4103	**$4.95**
12.7mm Red	FND560 / LTLTS5303	Z 4150	**$5.15**
13.2mm Orange	LTS5503AE	Z 4151	**$5.25**

Liquid Crystal Display



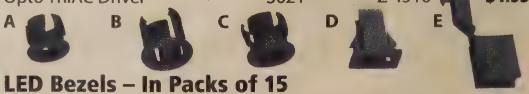
Digit size and Colour	Cat No	Price
4.5 Digit 10mm Digit Display	Z 4175	**$9.95**

Phototransistors/Photodiodes/LDRs

Digit Size and Colour	Cat No	Price
Infrared Receiver Subsystem Diode with Lens	*Z 1954	**$11.95**
Infrared Receiver Photo Diode LTR536A	Z 1956	**$4.95**
Infrared Receiver Subsystem Buffered	Z 1955	**$7.95**
Infrared Transmitting Diode LTE4208	Z 3235	**$1.80**
Light Dependent Resistor, LDR DSCD01	Z 4801	**$2.60**
Fiberoptic Transmitter Coupler MF0E71	*Z 4750	**$11.95**
Fiberoptic Receiver Coupler MF0D73	*Z 4752	**$7.95**
Phototransistor, Darlington	Z 1951	**$2.20**

Optoisolator/couplers – 6 Pin Dip

	Type	Cat No	Price
Standard LED/Photodiode	4N25/4N28	Z 4804	**$2.20**
Standard LED/Photodiode	H11A1Z	*Z 4810	**$1.45**
Fast Data Transfer, MIDI	6N138	Z 4808	**$5.95**
High Transfer Ratio	SFH601-3	Z 9023	**$4.95**
Opto TRIAC Driver	3021	Z 4516	**$4.95**



LED Bezels – In Packs of 15

A. 3mm Clip-on LED Bezel 15 pack	H 1933	**$2.75**
B. 5mm Clip-on LED Bezel 15 pack	H 1934	**$2.75**
C. 5mm Bezel & Ring Collar 15 pack	H 1910	**$2.95**
D. 5mm Round Right Angle 10 pack	H 1931	**$2.25**
E. 5mm Rect LED Bezel 10 pack	H 1935	**$3.25**

*Limited Stocks Available

Capacitors

60 piece Ceramic Pack

Quality 50V Ceramic Capacitors in specially selected common values.
Cat R 7050

$9.95

50 piece Monolithic

Ceramic Pack High stability 50V. Commonly used in by-pass and coupling circuits. 0.1uF
Cat R 7062

$14.95

50 piece Greencap Pack

5% 100WV Polyester Capacitors in specific value range packs.

Pack A	0.001-0.022uF	Cat R 7041
Pack B	0.0027-0.056uF	Cat R 7042
Pack C	0.0068-0.015uF	Cat R 7043
Pack D	0.018-0.039uF	Cat R 7044
Pack E	0.047-0.1uF	Cat R 7045

$9.95

60 piece Greencap Pack

5% 100WV Polyester Capacitors in selected most used common values.
Cat R 7040

$12.95

65 piece MKT Polyester Pack

5% 100WV MKT Capacitors in 5.08mm Leg Spacing.
Cat R 7070

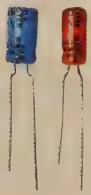
$16.95

55 piece Electrolytic Pack

Quality single-ended (RB) electrolytics from 2.2uF to 470uF and in 10V to 25V.
Cat R 7030

$12.95

100 piece Electrolytic Capacity Pack

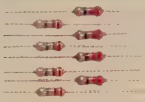


This great value pack contains mixed RB Electrolytics from 0.1uF to 100uF and in mixed voltages up to 50V. All are rated at 85°C.
Cat R 7037

$18.95

Carbon Film Resistors

300 Piece 1/4W Pack



Computer selected 50 values for maximum versatility. Quality 5% types – our most popular!
Cat R 7010

$9.95

5% 1/4W Budget Packs

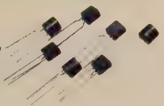
In a selected value range

		Pieces	
Pack A	0-8.2 Ohms	130	Cat R-7100
Pack B	10-82 Ohms	120	Cat R-7102
Pack C	100-820 Ohms	120	Cat R-7104
Pack D	1k-8.2 kOhms	120	Cat R-7106
Pack E	10k-82 kOhms	120	Cat R-7108
Pack F	100k-820 kOhms	120	Cat R-7110
Pack G	1M-10 MOhms	130	Cat R-7112

$4.95

Semiconductors

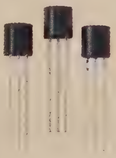
50 Piece Signal Transistors



1/2 size pack consisting of: 11 of each BC547, BC548, BC549, 6 of each BC557 and BC558 and 5 x BC559.
Cat Z 3002

$10.50

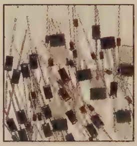
100 Piece Signal Transistors



Each pack has: 20 of each BC547, BC548, BC549, 15 of each BC557 and BC558 and 10 x BC559.
Cat Z 3000

$19.95

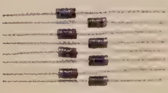
57 Rectifiers & SCRS Pack



Each has 20 x 1N4004, 10 x 1N4007, 10 x 1N5404, 10 x 1N5408, 2 x W04, 3 x C106Y1 or C106D and 2 x C122E.
Cat Z 3010

$19.95

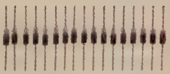
50 Pce 1N4004 Rectifier Diode Pack



400V 1A Rectifier Diodes in a bulk pack for more savings.
Cat Z 3012

$5.95

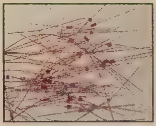
100 Pce Rectifier Diode Pack



This contains 100 pieces of 400V 1A IN4004 rectifier diodes.
Cat Z 3008

$8.95pk

100 Piece Mixed Signal Diode Pack

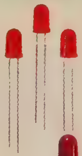


Each pack has: 25 x 1N60, 5 x 0A47, and 70 x 1N4148.
Cat Z 3005

$19.95

Premium 5mm LED Pack

100 Piece Red LED Pack



High efficiency quality 5mm LEDs with consistent colour and illumination.
Cat Z 4084

$24.95

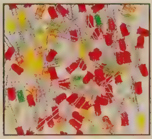
50 Piece Red LED Pack

Same types as above but for those who want fewer in quantity.
Cat Z 3011

$12.95

Assorted 5mm LED Pack

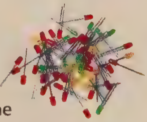
100 Piece Mixed Colour Pack



Each pack has: 60 x Red, 20 x Green, 10 x Yellow and 10 x Orange.
Cat Z 3015

$24.95

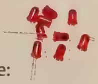
50 Piece Mixed Colour Pack



Half the quantity of the above for those who want less but still want the benefit from cost saving through bulk buying.
Cat Z 3018

$12.95

High Output 5mm Round LED Packs



Pack of 50 Red Luminous. Intensity: 90mcd. Viewing Angle: 40°. Forward Voltage: 2VDC. Forward Current: 25mA. Dominant Wavelength: 621nm.
Cat Z 7060

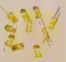
$12.95

Pack of 50 Green

Luminous Intensity: 60mcd. Viewing Angle: 40°. Forward Voltage: 2.1VDC. Forward Current: 25mA. Dominant Wavelength: 569nm.
Cat Z 7064

$12.95

Pack of 50 Yellow

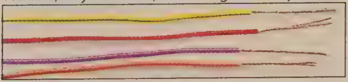


Luminous Intensity: 60mcd. Viewing Angle: 40°. Forward Voltage: 2.1VDC. Forward Current: 25mA. Dominant Wavelength: 588nm.
Cat Z 7068

$12.95

Hook-Up Wire

Flexible, fully insulated, low voltage hook up wire.



Flexible Light Duty

Rating: 1A Nom.
Conductors: 10 x 0.12mm
Cross Sectional Area: 0.11mm²
Insulation: PVC

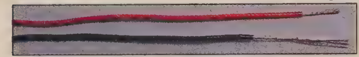
35¢m

Red	Cat W 2220	**D/Blue**	Cat W 2226
Black	Cat W 2221	**Purple**	Cat W 2227
Brown	Cat W 2222	**Lt Blue**	Cat W 2228
Orange	Cat W 2223	**Grey**	Cat W 2229
Yellow	Cat W 2224	**Cream**	Cat W 2230
Green	Cat W 2225	**White**	Cat W 2231

12 Colour Pack

A handy pack of 12 x 2m of different coloured strands of light duty wire the same as W 2220 to W 2231. All are 10 x 0.12mm cable. Cross sectional area: 0.11mm². Ideal for projects, hobbyists, etc.

Cat W 4010 $5.35pk



Medium Duty

Rating: 4.5A Nom.
Cross Sectional Area: 0.49mm²
Conductors: 10 x 0.25mm
Insulation: PVC

45¢m

Red	Cat W 2240	Blue	Cat W 2243
White	Cat W 2241	Yellow	Cat W 2244
Black	Cat W 2242	Yellow/ Green	Cat W 2246

Heavy Duty

Rating: 7.5A
Conductors: 24 x 0.2mm
Cross Sectional Area: 0.75mm²
Insulation: PVC

Red	Cat W 2260	**Black**	Cat W 2262
Green/Grey	Cat W 2264		

55¢m

Very Heavy Duty

Rating: 10A Nom.
Conductors: 32 x 0.2mm
Cross Sectional Area: 1.0mm²
Insulation: PVC

Brown	Cat W 2280	**Blue**	Cat W- 2282
Red	Cat W 2284		

65¢m

Ultra Heavy Duty

Rating: 30A max.
Conductors: 41 x 0.32mm
Cross Sectional Area: 3.3mm²
Insulation: PVC

Red	Cat W 2286
Black	Cat W 2288

$1.35m

Ultra Flexible

Ideal for use in making low voltage test leads, or where movement or vibration in equipment makes the use of a flexible cable necessary.

Rating: 10A max.
Conductors: 512 x 0.05mm
Cross Sectional Area: 1mm²
Insulation: PVC

Red	Cat W 2290
Black	Cat W 2292

$4.50m

DC Power Cable

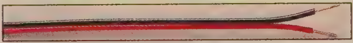


Figure-8 Medium Duty

Compact, medium duty DC cable suited to supplying power to smaller projects etc.

Conductors: 50 x 0.12mm
Rating: 50V, 5A nom.
Cross Sectional Area: 0.55mm²
Cat W 2022

95¢m

Figure-8 Heavy Duty

Ideal for running 150W spot lights etc on the car, or any high current DC application. Colour-coded insulation to find polarity easier.

Conductors: 26 x 0.3mm
Rated: 50V, 17A max.
Cross Sectional Area: 1.8mm²
Cat W 2025

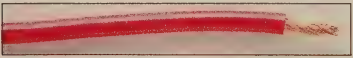
$1.95m

Auto Heavy Duty

Similar to the cable above but provides a larger conductor area. Colour-coded and has an extra sheath for added protection in automotive applications.

Conductors: 26 x 0.32mm
Rated: 50V, 19A max.
Cross Sectional Area: 2.1mm²
Cat W 2027

$2.45m



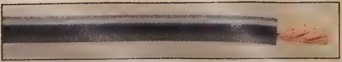
Extra Heavy Duty

Ideal for high current DC applications such as high-power car audio installations, communications equipment, and solar power systems. High-quality O.F.C copper conductors with highly flexible PVC sheath.

Conductors: 630 x 0.12mm
Rating: 50V, 50A max.
Conductor Area: 7.1mm²
Sheath: Flexible PVC, 6.5mm OD

Red	Cat W 2302
Black	Cat W 2304

$3.50m



Ultra Heavy Duty

For those installations with huge DC current needs, such as professional vehicle audio systems, large solar installations, and high power transmitting equipment. High quality OFC copper conductors and a highly flexible PVC sheath allow easier installations in tight spaces.

Conductors: 1,666 x 0.12mm
Rating: 50V, 120A max.
Conductor Area: 18.8mm²
Sheath: Flexible PVC, 10.3mm OD

Red	Cat W 2306
Black	Cat W 2308

$8.95m

Speaker Cable

Light Duty

Suitable for short runs in intercoms and hi-fi applications. PVC insulation with colour-coded polarity indicator.

Conductors: 14 x 0.14mm
Cross Sectional Area: 0.22mm²
Insulation: PVC
Cat W 2010

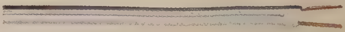
75¢m

Medium Duty

Lower resistance than W-2010, for use in longer runs. PVC insulation, with colour-coded polarity indicator.

Conductors: 14 x 0.20mm
Cross Sectional Area: 0.44mm²
Insulation: PVC
Cat W 2012

85¢m



Heavy Duty

Heavy duty mains rated (240V AC @ 7.5A), insulated cable for use with medium to high power and long runs. PVC insulation with colour-coded polarity indicator.

Conductors: 24 x 0.20mm
Cross Sectional Area: 0.75mm²
Insulation: PVC
Cat W 2020

$1.25m

Monster Cable

High quality construction speaker cable with flexible copper stranding for easy installation

Technology & Features

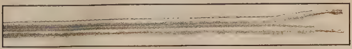
- Duraflex jacket for protection from abrasion, chemicals & temperature extremes
- Non-visual channel identification for error-free hook-up in hard to see areas
- S16 (16 AWG/1.3mmG) size model

Cat W 2019

$3m

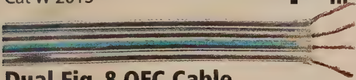
OFC Speaker Cable

Our OFC (oxygen-free copper) cable with PVC insulation has extremely high conductivity and very low power loss. It provides the best performance for demanding audiophile applications, and it's attractive translucent insulation makes it unobtrusive in most installations.



OFC Speaker Cable

Conductors: 60 x 0.12mm
Cross Sectional Area: 0.66mm^2
Insulation: PVC
Nom. Cap: 50pF/m
Cat W 2013 **$1 95 m**



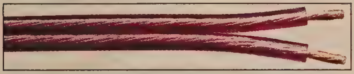
Dual Fig. 8 OFC Cable

Conductors: 60 x 0.12mm
Cross Sectional Area: 0.66mm^2
Insulation: PVC
Nom. Cap: 50pF/m
Cat W 2023 **$2 75 m**

OFC LOUD SPEAKER CABLE

Low Loss OFC

Conductors: 168 x 0.12mm
Cross sectional area: 1.9mm^2
Nom. Cap: 60pF/m
Cat W 2016 **$3 45 m**



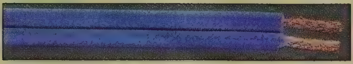
Super Low Loss OFC

Conductors: 315 x 0.12mm
Cross Sectional Area: 3.5mm^2
Insulation: PVC
Nom. Cap: 60pF/m
Cat W 2017 **$4 95 m**

Harmony High Performance Flat OFC Speaker Cable

NEW FOR '99

This new range of high performance flat braid OFC speaker cable is designed for audio and home theatre applications. It has a special low profile design that fits under most carpets.



16 Braid Harmony OFC Cable

Conductors: 112 x 0.10mm
Cross Sectional Area: 0.88mm^2
Insulation: PVC
Nom. Capacitance: 40pF/m
Cat W 2000 **$2 50 m**

24 Braid Harmony OFC Cable

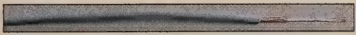
Conductors: 168 x 0.10mm
Cross Sectional Area: 1.3mm^2
Insulation: PVC
Nom. Capacitance: 40pF/m
Cat W 2001 **$3 50 m**

Shield Audio Cable

Light Duty

Single-Core Mini

Centre Conductors: 10 x 0.08mm copper
Shielding: Wrapped copper
Diameter: 1.3mm OD
Nom. Capacitance: 390pF/m
Cat W 2031 **70¢m**

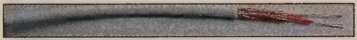


Single-Core Shielded

Centre Conductors: 7 x 0.12mm copper
Shielding: 32 x 0.12mm, spiral wrapped
Diameter: 3mm OD
Nom. Capacitance: 200pF/m
Cat W 2030 **90¢m**

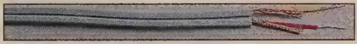
Twin-Core Mini Shielded

Conductors: 16 x 0.1mm copper
Shielding: 30 x 0.11mm wrapped
Diameter: 2.5 x 5mm OD
Nom. Capacitance: 370pF/m
Cat W 2026 **$1 05 m**



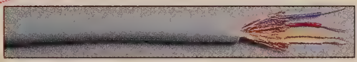
Twin-Core Shielded

Centre Conductors: 7 x 0.12mm copper
Shielding: 32 x 0.12mm, spiral wrapped
Diameter: 4mm OD
Nom. Capacitance: 210pF/m (Conductor-shield)
Cat W 2034 **$1 45 m**



Twin-Shielded Fig. 8

Centre Conductors: 7 x 0.12mm copper
Shielding: 32 x 0.12mm, spiral wrapped
Diameter: 2 x 2.8mm OD
Nom. Capacitance: 210pF/m
Cat W 2036 **$1 65 m**



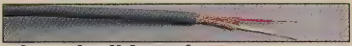
4-Core Shielded

Centre Conductors: 7 x 0.12mm copper
Shielding: 32 x 0.12mm, spiral wrapped
Diameter: 5mm OD
Nom. Capacitance: 190pF/m (Conductor-shield)
Cat W 2038 **$1 95 m**

4-Core Flat

Centre Conductors: 10 x 0.1mm copper
Shielding: Spiral-wrapped copper
Diameter: 4 x 2.5mm OD
Nom. Capacitance: 300pF/m
Cat W 2039 **$2 25 m**

Heavy Duty



Ultra Flexible Twin Core

Quality Japanese Cable.
Centre Conductors: 10 x 0.12mm
Shielding: 48 x 0.1mm braided copper
Sheath: Flexible PVC, 5mm OD
Nom. Capacitance: 225pF/m (Conductor-shield)
Cat W 2037 **$2 45 m**

Microphone Cable

Very heavy insulation and double cotton strengthened. Ideal for PA systems and professional sound installations.
Centre Conductors: 20 x 0.12mm copper
Shielding: Braided copper
Sheath: PVC, 6mm OD
Nom. Capacitance: 90pF/m (conductor-shield) 60pF/m (conductor-conductor)
Cat W 2035 **$2 95 m**

Super OFC Single

High quality, single-core shielded cable made with Oxygen Free Copper (OFC) for maximum conductivity and shielding properties (90% coverage).
Centre Conductors: 14 x 0.18mm
Shielding: 112 x 0.12mm 12 pitch braided copper
Sheath: PVC, 6mm OD
Nom. Capacitance: 85pF/m
Cat W 2032 **$2 95 m**

Super OFC Fig. 8

Great for audio use eg. making up RCA to RCA patch leads. 90% shield coverage.
Centre Conductors: 14 x 0.18mm
Shielding: 112 x 0.12mm 12 pitch braided copper
Sheath: PVC
Nom. Capacitance: 85pF/m
Cat W 2033 **$4 95 m**

Coiled Mic Cable

Extends fully up to 1 metre. 3 core, ideal for transceiver microphone leads.
Centre Conductors: 30 x 0.08mm
Shielding: wrapped copper (1 conductor only)
Sheath: PVC
Cat W 1365 **$6 95**

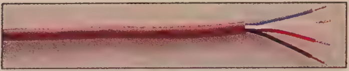
Intercom/Alarm Cables

Multi-stranded, low current capacity cables ideal for wiring alarm systems, intercoms, etc.

Bell Cable

Conductors: 1 x 0.6mm
Sheathing: PVC
Cat W 2005

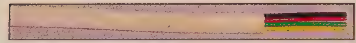
60¢m



4-Core - Flexible

Conductors: 7 x 0.20mm
Sheathing: PVC
Nom. OD: 4.0mm
Cat W 2101

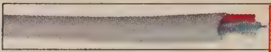
$1⁵⁰m



4-Conductor/Flat Telephone Cable

Conductors: 7 x 0.16mm
Sheathing: PVC
Nom OD: 7mm
Cat W 2121

$1⁵⁰m



NEW FOR '99

4-Core Telepermitted Telephone Cable

Conductors: 1 x 0.51mm solid
Sheathing: 75°C PVC
Telepermit: PTC222/98/003
Cat W 2128

$1⁵⁰m

6-Core Telepermitted Telephone Cable

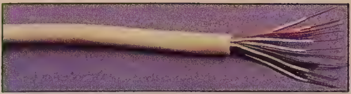
Inner Conductor: 6 x 0.40mm bare copper
Insulation: 0.80mm PVC
Sheath: 3.80mm PVC (White)
Telepermit: PTC 204/94/002
Cat W 2102

$1⁷⁵m

6-Core - Telephone Style

Conductors: 1 x 0.5mm
Sheathing: PVC
Nom. OD:4.2mm
Cat W 2127

$1²⁵m

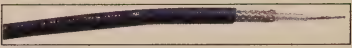


12-Core

Conductors: 1 x 0.5mm
Sheathing: PVC
Nom. diameter: 6.7mm
Cat W 2140

$1⁹⁵m

Communication Cables



50 Ohm RG-58C/U

Commercial grade 50 ohm coax. Complies with Mil Spec MIL-C-17D. Ideal for mobile installations due to its small 5mm OD size. It can also be used outdoors over long periods due to its UV resistant PVC outer sheath.

Centre Conductors: 19 x 0.18mm tinned copper
Shielding: Braided tinned copper, 94.2% coverage
Dielectric: PE Type A
Attenuation @100m: 100MHz: 16dB
200MHz: 24dB
400MHz: 38dB
Cat W 2092

$1⁹⁵m

50 Ohm RG-213/U

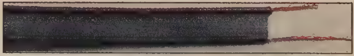
A 10mm diameter, low loss 50 ohm cable for HF and VHF/UHF applications. Complies with MIL-C-17D. Ideal for longer runs or high power operation.

Centre Conductors: 7 x 0.7mm copper
Shielding: Braided copper, 97% coverage.
Dielectric: PE
Attenuation @ 100m: 50MHz: 5.2dB
100MHz: 7.2dB
400MHz: 15.4dB
Cat W 2099

$3⁹⁵m

TV Cables

75 ohm coaxial and 300 ohm ribbon TV cables. The cable you choose will depend on the length of the run, the position of the cable and the strength of the signal in your area.



TV Ribbon Cable

300 ohm ribbon cable for connecting antennas to TV sets. Suitable for shorter runs. Available in both black and clear. VHF use only.

Black Cat W 2070
Clear Cat W 2071

90¢m

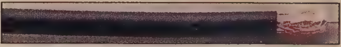
2080 RG-59U 75 OHM COAX

TV Cable RG-59U Economy

75 ohm coax suitable for most average installations where there's a reasonable signal and runs are not too long.

Centre Conductor: 1 x 0.6mm
Shielding: Foil shield & copper braid
Dielectric: Solid P.E.
Attenuation @ 100m: 100MHz: 7dB,
300MHz: 14dB,
550MHz: 23dB
White Cat W 2080
Black Cat W 2081

$1⁷⁵m

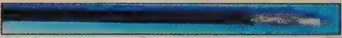


75 Ohm Air Space

High quality, low loss coax that's ideal for low signal area installations. It's larger diameter centre conductor and air-spaced dielectic provide much lower loss than standard RG-59 cables, especially at UHF frequencies.

Centre Conductor: 1 x 0.95mm copper
Shielding: Foil & 48 x 0.12mm copper braid
Dielectric: Air cored P.E.
Attenuation @ 100m: 100MHz: 6.9dB
200MHz:10.2dB
470MHz:15.5dB
700MHz:19.3dB
Cat W 2082

$1⁹⁵m



75 Ohm TV Cable RG-6

Used where less attenuation of the signal or longer cable lengths are required between antenna and television socket.

Conductor: 1.0mm Bare Copper
Dielectric: 4.60mm Foam PE
Braiding: 64x0.12mm Tinned Copper
Sheath: A1 Foil and 6.50mm PVC, Meter Marked
Attenuation: 100MHz: 7.4dB
200MHz:10.3dB
500MHz:16.4dB
900MHz:22.8dB
Normal Velocity Ratio: 83%
Black Cat W 2084
White Cat W 2086 **NEW**

$2²⁵m

NEW FOR '99

Belden RG6 TV Cable

Sky Satellite Approved, low loss broadband cable. Ideal for upgrading your existing cable to allow for future satellite TV installation.

Conductor: 1mm Copper Covered Steel
Dielectric: Gas injected polyethylene foam
Shield: Duobond II, 60% aluminium braid
Attenuation: 211MHz 9.15dB
450 MHz 13.5dB
1000 MHz 20.4dB
Velocity: 82%
Cat W 1201

$2⁷⁵m

Rainbow

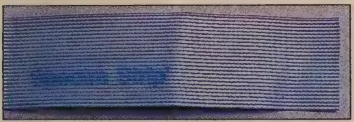
Colour-coded strands of insulated conductors bonded together in a flat cable. Ideal for wiring looms, alarm systems, etc. Can be layed under carpets, split easily for separate wires or used as is.

12-Way

12 strands of 10 x 0.12mm tinned conductors. Conductor area is 0.11mm².
Cat W 2045
$\$2^{95}_{\mathrm{m}}$

IDC Computer Cables

Flat, multi-strand cable made specially for IDC applications.



Type	Cat No	Price/m
26-way	W 2750	$3.95
34-way	W 2752	$4.50
40-way	W 2754	$4.95
50-way	W 2756	$5.95

Data Cables

Category 5 Data Cable

8 Conductor (4 pair) Indoor Communications cable with nominal 100 ohm impedance, suitable for "patching" applications and data networks.

Conductors:	1/0.5mm
Sheath:	PVC
Nom. OD:	5.2mm
Nom. Cap:	15nF/305m (per pair)

W 2151
$\$1^{25}_{\mathrm{m}}$

Category 5 Data Cable - Multi Strand

8 Conductor (4 pair) Indoor Communications cable with nominal 100 ohm impedance, suitable for "patching" applications in data networks.
Cat W 2150
$\$1^{25}_{\mathrm{m}}$

Computer/Data Cables

Fully insulated, shielded and sheathed multi-core data cables with tinned drain wire. Ideal for running data lines around buildings.

5-Core

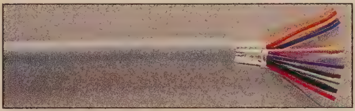
Conductors:	7 x 0.2mm
Sheath:	PVC
Shielding:	Foil with drain wire
Nom. OD:	5.5mm

Cat W 2040
$\$2^{50}_{\mathrm{m}}$

8-Core

Conductors:	7 x 0.2mm
Sheath:	PVC
Shielding:	Foil with drain wire
Nom. OD:	6.25mm

Cat W 2046
$\$2^{95}_{\mathrm{m}}$



12-Core

Conductors:	7 x 0.2mm
Sheath:	PVC
Shielding:	Foil with drain wire
Nom. OD:	7.0mm

Cat W 2041
$\$3^{95}_{\mathrm{m}}$

25-Core

Conductors:	7 x 0.2mm
Sheath:	PVC
Shielding:	Foil with drain wire
Nom. OD:	10.0mm

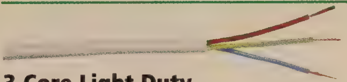
Cat W 2043
$\$4^{95}_{\mathrm{m}}$

Fibre Optic Cable

Fibre Optic Cable Pack

4m Supra grade optical fibre cable for communications, industrial, or decorative uses. Provides <0.25dB/m attenuation at 650nm, and aperture acceptance angle of 55°. Consists of a single 1.0mm diameter optical fibre inside a tough black jacket of 2.2mm OD. Data sheet supplied.
Cat W 4061
$\$16^{95}$

Mains Cable

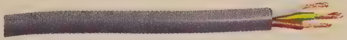


3-Core Light Duty

Suitable for small mains rated projects, test equipment and low current applications.

Conductors:	16 x 0.2mm
Rating:	240V AC, 3A nom.
Sheath:	PVC White, 5.6mm OD

Cat W 2052
$\$1^{95}_{\mathrm{m}}$



3-Core Light Duty

Suitable for projects, test equipment, etc not subject to excessive wear and tear, or where size and weight are important.

Conductors:	24 x 0.2mm
Rating:	240V AC, 7.5A nom.
Conductor Area:	0.75mm² nom.
Sheath:	PVC Grey, 6.1mm OD

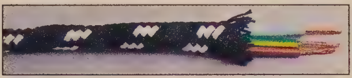
Cat W 2055
$\$2^{25}_{\mathrm{m}}$

3-Core Ordinary Duty - 7.5A

Suitable for projects, etc subject to normal, every-day use, such as extension leads, smaller appliances, small power tools, etc.

Conductors:	24 x 0.2mm
Rating:	240V AC, 7.5A nom.
Conductor Area:	0.75mm² nom.
Sheath:	PVC Grey, 7mm OD
Sheath Thickness:	0.8mm nom.

Cat W 2056
$\$2^{25}_{\mathrm{m}}$

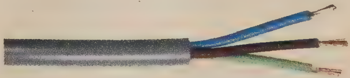


3-Core Textile

Flexible cable with textile outer sheath. For older style appliance. Textile sheath colours may vary.

Conductors:	42 x 0.15mm
Rating:	240V AC, 7.5A nom.
Conductor Area:	0.75mm² nom.
Sheath:	Textile braid, 5.8mm OD

Cat W 2054
$\$2^{50}_{\mathrm{m}}$



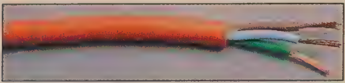
3-Core Ordinary Duty - 10A

The ideal cable for power tools, etc where high drain and excessive wear call for something a little more robust.

Conductors:	32 x 0.2mm
Rating:	240V AC 10A nom.
Conductor Area:	1.0mm² nom.
Sheath:	PVC Grey, 7.4mm OD
Sheath Thickness:	0.8mm nom.

Cat W 2058
$\$2^{95}_{\mathrm{m}}$

Wire/Cable



3-Core Ordinary Duty - 15A

High power rating and very heavy insulation for industrial power tools, caravan power cables, extension leads for garden power tools, etc.

Conductors:	30 x 0.25mm
Rating:	240V AC, 15A nom.
Conductor Area:	1.5mm^2 nom.
Sheath:	PVC. Orange, 8.6mm OD
Sheath Thickness:	0.9mm nom.

Cat W 2059 **$\$3^{50}{}_{m}$**

6-Core Flex

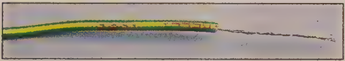
Ideal for older style rotators, or alarm system installations, where six conductors are required.

Conductors:	24 x 0.2mm
Rating:	240V AC, 7.5A nom.
Conductor Area:	0.75mm^2 nom.
Sheath:	PVC

Cat W 2042 **$\$3^{95}{}_{m}$**

Builder's Cable

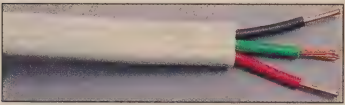
A range of wire and cable as used by builders for standard 240V house wiring.



Earth Wire

Conductors:	7 x 0.67mm
Rated:	240V AC, 25A nom.
Cross Sectional Area:	2.5mm^2
Insulation:	Outer - PVC

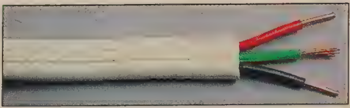
Cat W 3010 **$\$1^{35}{}_{m}$**



1/1.13 Twin & Earth

Conductors:	1 x 1.13mm (except earth)
Rated:	240V AC, 10A nom.
Cross Sectional Area:	1.0mm^2
Insulation:	Outer - PVC (V75) Inner - PVC

Cat W 2060 **$\$1^{40}{}_{m}$**

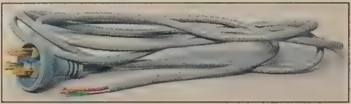


1/1.78 Twin & Earth

Conductors:	1 x 1.78mm
Rated:	240V AC, 25A nom.
Cross Sectional Area:	2.5mm^2
Insulation:	Outer - PVC (V75) Inner - PVC

Cat W 2062 **$\$1^{95}{}_{m}$**

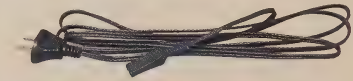
Mains Leads



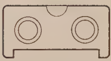
Cable With 3-Pin Plug

Light duty cable (240V AC @ 10A) fitted with standard 3-pin plug on one end. The other end is bare ready for connection to your project. 2 metres long.

Cat W 2057 **$\$6^{50}$**

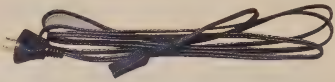


Mains Lead 7mm Spacing

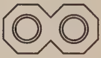


2-metre mains cable fitted with standard 2-pin mains plug on one end and 7mm pin spacing socket on the other. As used on Sanyo and other modern audio equipment which does not require an earth lead.

Cat W 1361 **$\$9^{95}$**



Universal Mains Lead



Approved mains cable as used on a huge variety of audio and entertainment equipment which does not require an earth lead. It's 2 metres long and has a 2-pin mains plug on one end and a 2-pin figure-8 type socket on the other.

Cat W 1360 **$\$9^{95}$**

IEC Mains Lead

Approved 2-metre mains lead with standard 3-pin plug on one end and 3-pin IEC socket on the other. As used on most computers and communications equipment. 10amp rated.

Cat W 1362 **$\$9^{95}$**

IEC Mains Lead - Right Angle

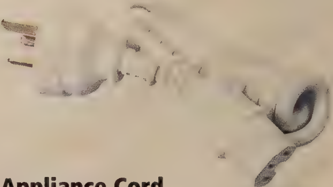
Approved 2 metre mains lead similar to W 1362 above, but with right angle IEC socket. Ideal for situations where lack of space behind equipment prevents use of a standard straight IEC mains lead. 10amp rated.

Cat W 1375 **$\$14^{95}$**

IEC Male/Female Extension Lead

Quality 2-metre extension lead. Ideal for connecting printer or monitor to your computer.

Cat W 1366 **$\$12^{95}$**



Appliance Cord

Coiled appliance cord fitted with standard 3-pin plug and IEC socket. As used on modern kettles and other kitchen appliances. Stretches to 1 metre.

Cat W 1379 **$\$19^{95}$**

Winding & Coated Wire

Tinned Copper Wire

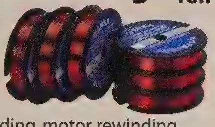
VERSA
TINNED COPPER WIRE
100g
VERSA ELECTRONICS
0.71mm
AUSTRALIA

High-quality tinned copper wire (22SWG) in handy 100g roll. Ideal for PC board links, hard wire jumper leads, chassis wiring, etc. Approximately 27-metre roll of 0.71mm tinned copper wire.

Cat W 3015

$9.95 roll

Self-Fluxing Winding Wire

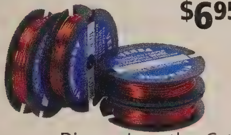


Ideal for coil winding, motor rewinding, transformer building, etc.

25g Rolls

Gauge B&S	Gauge SWG	Diam mm	Length Metres	Cat No
21	22	0.71	7	W 3123
24	25	0.50	13	W 3124
26	27	0.40	21	W 3126
30	33	0.25	55	W 3130
32	36	0.20	85	W 3132
36	40	0.125	216	W 3136

$6.95 ea



100g Rolls

Gauge B&S	Gauge SWG	Diam mm	Length Metres	Cat No
16	18	1.25	9	W 3116
18	19	1.0	14	W 3118
20	21	0.8	21	W 3120
22	23	0.63	35	W 3122

$9.95 ea

Resistance Wire Pack - Cuprothal

Suitable for the construction of wire wound resistors, small heater elements, shunts, etc. Also ideal for emitter resistors in high power amplifiers. The wire is 28 B&S (0.32mm), it's solderable and has a resistance of 6.08 ohms/m. Composition: 45% nickel, 55% copper. Maximum continuous service temperature is 540°C. Comes in a 4-metre pack.

Cat W 3200

$1.95 pack

Resistance Wire Pack - Nichrome 80

Nichrome 80 is suitable for resistance heating elements where extreme temperatures (up to 1200°C) are involved. It's supplied in a 4m pack of 28 B&S gauge (0.32mm diameter) and provides a resistance of 13.4 ohms/m at 20°C.

Cat W 3205

$2.95 pack

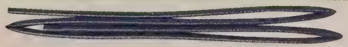
Wire Wrap Pack

High quality insulated Kynar wire wrap wire in convenient 15 metre rolls. 30 AWG (0.25mm diam.) silver-plated copper for use where very high density interconnections and superior electrical characteristics are important.

Colour	Cat No	Colour	Cat No
Black	Cat W 4002	Red	Cat W 4004
Green	Cat W 4006	Blue	Cat W 4008

$8.95 roll

Tubing & Heatshrink



Heat-Shrinkable Materials 2:1

High flexibility, radiation cross linked, flame retardant (except clear), tubing. Military grade polyolefin, available in an assortment of colours. Complies with U.S.Mil Spec. MIL-1-23053/5. Shrinks to approximately 1/2 listed diameter with very little longitudinal change (<5%). All lengths are 1.2m long.

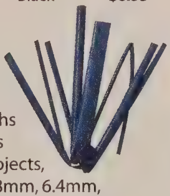
Size	Black	Colours	Price
1.6mm	W 4100	W 4102	**$3.75**
3.2mm	W 4104	W 4106	**$4.45**
4.8mm	W 4108	W 4110	**$4.95**
6.4mm	W 4112	W 4114	**$5.75**
9.5mm	W 4116	W 4118	**$5.95**
12.7mm	W 4120	W 4122	**$6.75**
19.1mm	W 4124	W 4126	**$9.95**
25.4mm	W 4128		**$12.95**

Heat-Shrinkable Materials 3:1

Grade quality as above but shrinks to approximately 1/3 listed diameter.
Comes in a pack of 5 lengths by 200mm long.

Size	Cat No	Colour	Price
1.5mm	W 4400	Black	**$5.25**
3mm	W 4401	Black	**$5.75**
7mm	W 4402	Black	**$6.95**

Hobbyists Heat-Shrink Pack



Handy pack of heat-shrink tube in assorted colours, sizes and lengths (short lengths only). It's ideal for a variety of projects, etc. Includes 3.2mm, 4.8mm, 6.4mm, 9.5mm, and 12.7mm diameter tubing.

Cat W 4060

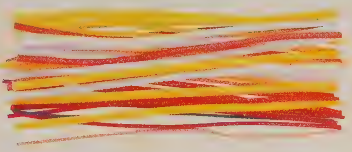
$6.95 pack

Heat-Shrink Tubing Kit

Assorted pre-cut lengths of quality heatshrink tubing in a handy plastic storage case. Includes 2.5mm, 3mm, 5mm, 7mm, 10mm, 13mm and 20mm diameter tubing.

Cat W 4200

$22.95



Spaghetti Pack

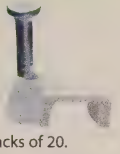
Contains 30 lengths of assorted colours and diameters of spaghetti tubing (each length is greater than 150mm long). Over 4.5m in total length.

Cat W 4040

$5.75 pack

Cable Restraints

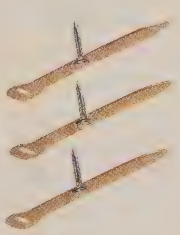
Quick Fix Cable Clamps



Designed to hold mains cable firmly in timber, masonry etc. Packs of 20.

Size	Cable Type	Colour	Cat No	Price
4mm	Round	White	W 4050	**$3.50**
5mm	Figure 8	White	W 4020	**$3.50**
6mm	Round	White	W 4051	**$3.50**
6mm	Round	Black	W 4052	**$3.50**
8mm	Round	White	W 4053	**$3.50**
13mm	Twin	White	W 4021	**$3.95**
15mm	Twin	White	W 4022	**$3.95**

Cable Pin Clips



The easy way to secure wires and cables. Brass Clips with fastening nail.

Cat W 4059

$6.50 pack

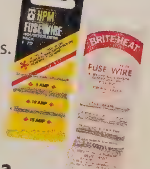
Cable Staples

Make fixing low voltage cables to timber easy! They simply straddle the cable and are hammered into place. A plastic cover under each staple helps prevent damage to the cable. In packs of 100.

Cat W 4025

$5.95 pack

Fuse Wire



Handy packs of fuse wire for use in mains fuse boxes.
5A, 10A, 15A
Cat H 3182
8A, 16A, 20A, 30A
Cat W 3180

$2.50 ea

• DATA • DATA • DATA

Hobbyists, tradesmen, students and technicians find the Dick Smith Electronics Catalogue a very useful source of information. If you're new to our Catalogue you can expect up-to-date data and handy hints that you won't come by anywhere else. Used by schools and colleges throughout the country, our famous "Data Section" has been fully revised to keep you up to speed with the very latest information. All material has been designed and compiled by our Research and Development Department. No other catalogue in the country gives you so much. In fact, it's so good, you'll often find sections copied, or should we say borrowed, by lesser quality publications. If you wish to copy any material, please seek permission from Dick Smith Electronics to do so. So, when you need accurate, useful and comprehensive information on hand, reach fo your Dick Smith Electronics Catalogue. In addition to this comprehensive informatio Data Sheet Packs containing hard-to-get data on integrated circuits are available (5800/02) from your local store.

Please Note

Not all devices shown in this section are stocked by Dick Smith Electronics. While every effort is made to ensure that this data is correct and as up-to-date as possible, you should check the manufacturer's data sheet and you should seek further advice before you act on this information.

Battery Replacement Guide

Type Nos		Voltage	Size	Type	Replaces Other Type Nos						
General Purpose Heavy Duty											
	S-7232	1.5	AA	Carbon Zinc	R6C	UM3-DE	15	M15R	UM3	R6TR	HR6
		1.5	C	Carbon Zinc	R14C	UM2-DE	14	M14R	UM2	R12TR	HR14
		1.5	D	Carbon Zinc	R20C	UM1-DE	13	M13R	UM1	R20TR	HR20
		9	Radio	Carbon Zinc	6F22	006P-DE	PP3	2022	6F22TR	H6F22	M1604
Extra Heavy Duty											
	S-7237	1.5	AA	Carbon Zinc	R6P	UM3-NE	15D	M15HD	SUM3	R6HD	ER6
	S-7238	1.5	C	Carbon Zinc	R14P	UM2-NE	14D	M14HD	SUM2	R14HD	ER14
	S-7239	1.5	D	Carbon Zinc	R20P	UM1-NE	13D	M13HD	SUM1	R20HD	ER20
Alkaline											
E90		1.5	N	Alkaline	LR1	AM5	MN9100		4001	L20	910A
E91	S-7227	1.5	AA	Alkaline	LR6	AM3	MN1500	15A	4006	L40	
E92	S-7226	1.5	AAA	Alkaline	LR3	AM4	MN2400	24A	4003	L30	
E93	S-7228	1.5	C	Alkaline	LR14	AM2	MN1400	14A			
E95	S-7229	1.5	D	Alkaline	LR20	AM1	MN1300	13A	4020	L90	
E96	S-3275	1.5	AAAA	Alkaline							
522	S-7230	9	Radio	Alkaline	6LR61	6AM6	MN1604	1604	4022	6L10	6LF22
Lantern Batteries											
509		6	'Dolphin'	Carbon Zinc	4R25S	4F	908	M908	431	4R25	996
529		6	'Dolphin'	Alkaline	4LR25	908A	MN9080	509	1209		
731	S-7353	6	'Big Jim'	Carbon Zinc	4R25S-2	4F2	918	M918	4R25-2991		
732		12	'Big Jim'	Carbon Zinc	8R25	9FD	926	M926	TW2		
1209	S-7352	6	'Dolphin'	Carbon Zinc	4R25P	4F	908D	H4R25	430	96PP	509
1231		6	'Big Jim';	Carbon Zinc	4R25P-2	4F2	918D	H4R25-2	731		
Photographic/Special Purpose											
S76		1.5		Silver Oxide	GM13	G13	RS76	MS76	EPX76		
GP23A	S-7423	12		Alkaline							
J539		6		Alkaline	7K67	867	4018				
A544	S-7422	6		Alkaline	4LR44	7250	PX28	537	7H34	544	
GP27A	S-3434	12		Alkaline							
E164		5.6		Mercury Oxide	T164	HM-4N	TR164	V164PX			
E400N		1.3		Mercury Oxide	T400N	H-B	RM400R	V400PX			
E401		1.4		Mercury Oxide	RM401H	RM401					
EL2CR5	S-7348	6		Lithium	2CR5						
EL223AP	S-7338	6		Lithium	DL223A	BR-P2	CR-P2				
EPX675		1.35		Mercury Oxide	PX675	HS-C	H-C	RPX675	4677		
Calculator/Games											
A76	S-7444	1.5	High Drain	Alkaline	LR44	VG13A	RW82	4276	4176	EPX76	G13
					S76	357	AG13	5244			
186	S-7443	1.5	High Drain	Alkaline	LR43	VG12GA	FW84	4278	8007	GP86	G12
					548	386	AG12	10L124	SR43W	86A	D386
189	S-7445	1.5	High Drain	Alkaline	LR54	V10GA	RW89	4274	88019	GP89	GP10
					289	389	10L122	SRW1130	LR1130	A120	89A
EL123AP	S-7337	3		Lithium	CR123A	BR123A	DL123A				
ECR1220	S-3337	3	Low Drain	Lithium	CR1220	BR1220	DL1220				
ECR1616		3		Lithium	CR1616	BR1616	DL1616				
ECR2016	S-3332	3		Lithium	CR2016	BR2016	DL2016				
ECR2025	S-3330	3		Lithium	CR2025	BR2025	DL2025				
ECR2032	S-3331	3		Lithium	CR2032	BR2032	DL2032				
ECR2430	S-3336	3		Lithium	CR2430	BR2430	DL2430				
Watch/Hearing Aid											
AC13E		1.4		Zinc Air	DA13	L13Z	AC13	13HPX	R13ZA	13A	
AC312E		1.4		Zinc Air	DA312	L312ZA	AC312	312HPX	R312ZA	312A	
AC675E		1.4		Zinc Air	DA675	L6752A	AC675	675HPX	R6752A		
357	S-3293	1.5	High Drain	Silver Oxide	G13	J	SR44W	541	D357	SR44	7
362		1.5	Low Drain	Silver Oxide	G11	SR721SW	532	TR721SW	19		
364	S-7454	1.5	Low Drain	Silver Oxide	G1	SR621SW	531	TR621SW	31		
371	S-7455	1.5	Low Drain	Silver Oxide	SR69	SB-AN	V371	SR920SW	30		
377	S-7456	1.5	Low Drain	Silver Oxide	BA	SR626SW	D2V	37	39	V377	
379		1.5	Low Drain	Silver Oxide	SR521SW	JA	V379	50			
381	S-7458	1.5	Low Drain	Silver Oxide	SR1120SW	SB-DS	34	V381			
384	S-7457	1.5	Low Drain	Silver Oxide	SR41SW	527	D384	TR41SW	10		
386	S-3295	1.5	High Drain	Silver Oxide	G12	H	SR43W	548	D386	SR43	186
389	S-3292	1.5	High Drain	Silver Oxide	G10	SR1130W	554	D389	SR54	189	17
390		1.5	Low Drain	Silver Oxide	SR1130SW	SB-AU	11	V390			
395	S-7461	1.5	Low Drain	Silver Oxide		SR927SW	394	D394		SB-A4	280-17
392	S-7459	1.5	High Drain	Silver Oxide	G3	K	SR41W	547	D392	SR41	TR41W
393		1.5	High Drain	Silver Oxide	G5	F	546	D393	15		
397		1.5	Low Drain	Silver Oxide	G2	SR726SW	536	TR726SW	26		

Components

Correctly identifying electronic parts can be one of the most difficult tasks facing someone building or repairing electronic equipment. As components become even smaller to allow higher density circuit boards, it is ncreasingly difficult to distinguish the different types such as resistors, capacitors, inductors and subminiature fuses.

Knowing what markings to expect can be a big help when faced with a circuit board full of unfamiliar components. The information presented here, combined with a basic understanding of components should enable you to correctly identify those most commonly used.

Preferred Values

The system of preferred values, which is used for resistors, capacitors and inductors, was developed to provide a logical progression from one value to the next, where each value represents an increase by an approximately constant percentage. Depending on the tolerance of the particular components, there can be between 3 and 192 preferred values in each decade. The more common series are shown in the tables below. Values given for each series are repeated in every decade.

3 Per Decade (50% tolerance)

10 22 47

12 Per Decade (10% tolerance)

10 12 15 18 22 27 33 39
47 56 68 82

24 Per Decade (5% tolerance)

10 11 12 13 15 16 18 20
22 24 27 30 33 36 39 43
47 51 56 62 68 75 82 91

Decimal Multipliers

Decimal multiplier prefixes are in common use to simplify nd shorten the notations of quantities such as omponent values.

Capacitance, for example, is measured in Farads. But the arad is far too large a unit to be of practical use in most ases. For convenience, we use sub-multiples to save a ot of figures. For example, instead of writing .000000000001 Farads, we write 1pF (1 picofarad).

he more common prefixes and the relationships to one nother are as follows.

Abbrev.	Prefix	Multiply by	or
p	pico	0.000000000001	10^{-12}
n	nano	0.000000001	10^{-9}
u	micro	0.000001	10^{-6}
m	milli	0.001	10^{-3}
–	UNIT	1	10^{0}
k	kilo	1000	10^{3}
M	mega	1000000	10^{6}

Units

1000 pico units = 1 nano unit
1000 nano units = 1 micro unit
1000 micro units = 1 milli unit
1000 milli units = 1 unit
1000 units = 1 kilo unit
1000 kilo units = 1 mega unit

Circuit Notation

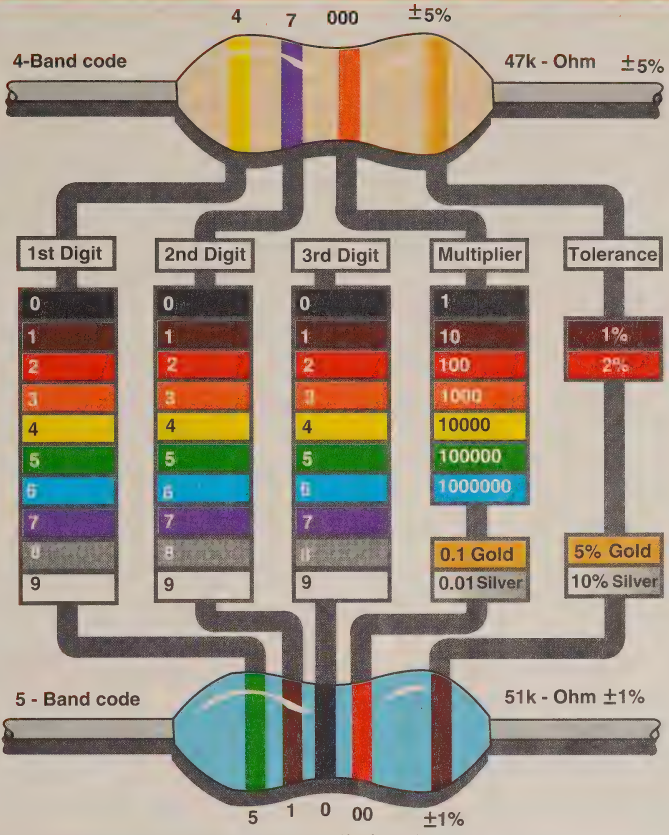
Some circuits give component values as they are normally spoken – e.g. 4.7pF for 4.7 picofarads, 5.6nH for 5.6 nanohenries. Others replace the decimal point with the first letter of the sub-multiple e.g. 5n6 for a 5.6nF capacitor or a 5.6nH inductor. Similarly for resistors, 6k8 is the same as 6.8k ohms while 1R5 would mean 1.5 ohms.

Tolerance

All components differ from their marked value by some amount. Tolerance specifies the maximum allowed deviation from the specified value. Tolerances are normally expressed as a percentage of the nominal value.

As an example, a component with a marked value of 100 and a tolerance of 5%, could actually be any value between 5% below the marked value (95), and 5% above the marked value (105).

Resistor Colour Code



1st Digit	2nd Digit	3rd Digit	Multiplier	Tolerance
0	0	0	1	
1	1	1	10	1%
2	2	2	100	2%
3	3	3	1000	
4	4	4	10000	
5	5	5	100000	
6	6	6	1000000	
7	7	7		
8	8	8	0.1 Gold	5% Gold
9	9	9	0.01 Silver	10% Silver

Full size copies of this chart are available from all stores (Cat B-1000)

Resistors

Most resistors are so small that it is impractical to print their values on them using normal numeric characters. Instead, they are marked using a code of coloured bands.

Resistors made to tolerance of 5% and 10% are marked with 4 bands while higher precision types, such as 2%, 1% or better, may be marked with 5 bands to allow for an extra digit of precision.

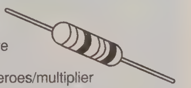
How to read 4-band codes:

At one end of the resistor there will be a gold, silver or brown tolerance band. This band is usually spaced apart from the other three bands. Start with the band nearest to the other end. Its colour represents the first digit of the resistor's value, as shown in the colour code chart. The next band represents the second digit of the resistor's value. The third band represents the decimal multiplier, that is, the number of zeroes that we have to put after the first two digits to arrive at the resistor's value. The final band gives us the tolerance of the resistor, silver for 10% types, gold for 5% types, brown for 1% types.

Let's take the resistor shown at the top of the colour chart as an example. It's first band is yellow, representing "4" and the second band is violet, representing "7". The third band, the multiplier, is orange which tells us to add 3 zeroes to the number we already have. This is the same as multiplying it by 1,000. Thus the value of the resistor is 47,000 – forty-seven thousand ohms or 47k-ohms. Finally, the fourth band, being gold, indicates that the resistor has a 5% tolerance, that is, its actual value will be somewhere between 44,650 ohms and 49,350 ohms.

Some special high-voltage resistors use a yellow tolerance band in lieu of gold. This is simply because the metal particles in the gold paint might compromise the resistor's voltage rating.

What they mean:



Band one – first figure of value
Band two – second figure of value
Band three – number of zeroes/multiplier
Band four – tolerance

Tolerance band colours: brown 1%, red 2%, gold 5%, silver 10%, none 20%.

Reading 5-band resistors:

Because the final band on these resistors is usually brown or red, it can be a bit more difficult to know which end to start from. In most cases the first four bands are grouped a bit closer together than the fourth and fifth bands. The first two bands are read the same as they are on the 4- band types. The third band supplies the third digit of the value. The fourth band now becomes the multiplier and the fifth represents the tolerance.

For example, if the 5 bands are, from first to fifth, red/yellow/white/gold/brown, then the three significant digits of the value would be "249", the multiplier would be 0.1, and the tolerance 1%. Hence, this is the code for a 24.9 ohm, 1% resistor.

What they mean:

Band one – first figure of value
Band two – second figure of value
Band three – third figure of value
Band four – number of zeroes/multiplier
Band five – tolerance

Capacitors

Capacitors may be marked to show their value, voltage rating, accuracy, temperature stability and other information. Most capacitors are not marked with all of these, however, the value and voltage rating are usually given. Identification can be difficult because of the variety of systems in use.

Units

The unit of capacitance is the Farad, but this unit is too large in practice. Commonly used smaller units are the microfarad (abbreviated uF), nanofarad (nF) and picofarad (pF). The section on decimal multipliers shows the relationship between these.

Some capacitance values are commonly expressed by only one unit while others can be expressed under two or more units, e.g. 1uF would rarely be called 1000nF and never 1,000,000 pF, even though these are equivalent. However, 0.0047uF is often expressed as 4.7nF, or as 4700pF.

Value

Larger capacitors are marked in microfarads and indicate this by the abbreviations 'uF', 'u' or even the obsolete 'MFD'. Smaller capacitors are marked in nanofarads or picofarads and may abbreviate the unit to 'n' or 'p'.

If the value contains a decimal point the 'u','n' or 'p' is sometimes put in place of the decimal point. Therefore a 4.7pF capacitor can be marked as 4p7.

If no unit is given, a judgement, based on the capacitor's physical size, must be made to determine which unit is intended. For example, a small ceramic capacitor marked '4.7' is probably 4.7 pF, whereas a large plastic capacitor marked '4.7' is more likely to be 4.7uF. If the value is in nF then this is invariably shown.

Another marking system uses 3 numeric digits to indicate the value in picofarads. The first two digits represent the first two digits of the value and the third digit is the multiplier or number of zeroes.

For example, a capacitor marked 104 would be read as 1, 0, 0000. This would be formatted as 100,000 pF and would commonly be known as 100nF or 0.1uF. Likewise a capacitor marked 472 would be 4700pF, also known as 4.7nF or .0047uF.

A similar system represents these 3 digits using colours taken from the resistor code, instead of numbers.

Some common values and their possible markings:

microfarads	nanofarads	picofarads	EIA code
0.0001uF*	0.1n*	100pF	101
0.00022uF*	0.22n (n22)	220pF	221
0.001uF	1n (1n0)	1,000pF	102
0.0033uF	3.3n (3n3)	3,300pF	332
0.01uF	10n	10,000pF*	103
0.047uF	47n	47,000pF*	473
0.1uF (u1)	100n	100,000pF*	104
0.82uF (u82)	820n	820,000pF*	824
1.0uF (1u0)	1000n*	1,000,000pF	105

(*) Not normally expressed in this form.

Voltage Rating

Voltage rating is usually marked and is often identified by the symbol 'V'. Most electrolytic capacitors clearly indicate their voltage rating. Polyester capacitors usually show the voltage rating but often omit the 'V' symbol. Small ceramic capacitors often show no voltage rating.

If the capacitance and voltage rating are both marked, a unit is also marked for at least one of the quantities so that the two cannot be confused.

Tolerance

Tolerance indicates how close a capacitor's actual value is likely to be to its marked value.

A tolerance can be marked numerically, as a code consisting of a single letter, or, on colour-coded capacitors, as a 4th coloured band. The code letter is usually placed immediately after the value. Commonly used tolerance codes are:

Code	Colour	Tol	Code	Colour	Tol
A	–	+20-10 (2)	L	–	+/-15%
C	red	+/-0.25pF (1)	M	black	+/-20%
D	green	+/-0.5pF (1)	N	–	+/-30%
E	white	+/-1.0pF (1)	P		+100 -0
F	brown	+/-1%	Q (2)	–	+30 -10
G	red	+/-2%	S	–	+50 -20
J	green	+/5%	W	–	+50 -10
K	white	+/-10%	W (2)	–	+40 -20
			Z	grey	+80 -20

(1) used on capacitors <=10pF
(2) used on electrolytic capacitors

Polarity

Polarity sensitive capacitors, such as electrolytics, are usually marked with a '+' or '-' symbol adjacent to one lead to indicate polarity. Thomson brand tantalum capacitors may have a triangular logo to indicate the positive lead, instead of the '+' symbol.

Temperature Characteristics

All real capacitors exhibit some change in value with varying temperature. Some ceramic types exhibit fairly linear changes and are useful as temperature compensating elements in AC circuits.

The temperature coefficients of these types may be marked in letter codes or designated by a coloured spot.

Tempco Code	EIA Code	JIS Code	Colour Code	Tempco ppm/°C
P100			red/violet	+100
NP0	COG	C	black	0
N30	S1G	H		-30
N033	S1G		brown	-33
N075	U1G		red	-75
N080	U1G	L	red	-80
N150	P2G	P	orange	-150
N220	R2G	R	yellow	-220
N330	S2H	S	green	-330
N470	T2H	T	blue	-470
N750	U2J	U	violet	-750
N1500	P3K	W	orange/orange	-1500
N2200	R3L			-2200
P350/N1000	SL	SL		+350 to -1000

Capacitors using the JIS code sometimes have a second letter to designate the temperature coefficient's tolerance.

Letter	Tempco Tolerance
G	+/-30ppm/°C
H	+/-60ppm/°C
J	+/-120ppm/°C
K	+/-250ppm/°C
L	+/-500ppm/°C

For example, a capacitor marked "CH" would have a temperature coefficient of between +60ppm/°C and -60ppm/°C ("C"=0, "H"= +/-60ppm/°C).

Ceramic capacitors with non-linear temperature coefficients sometimes use a 3-digit code to indicate their operating temperature range and their stability over that range.

The 1st character indicates minimum operating temperature, the 2nd, maximum temperature and the 3rd gives the stability over this temperature range.

1st Character	Min Temp °C	2nd Character	Max Temp °C
X	-55	5	+85
Y	-30	7	+125
Z	+10		

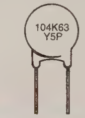
3rd Character	Stability (%)
F	+/-7.5
P	+/-10
R	+/-15
S	+/-22
T	+22/-33
U	+22/-56
V	+22/-82

An example of this is the common 'Z5U' type used in bypass applications. This capacitor operates over the +10° to +85° temperature range and exhibits a stability of +22 to -56% over this temperature range.

Putting It All Together

Knowing how the important information is likely to be marked, we can decode the markings on a capacitor and determine its value, voltage rating, tolerance and sometimes its temperature characteristic.

For example, a capacitor marked 104K 63V Y5P will be 0.1uF (decoded from the 104) having a +/-10% tolerance (decoded from the K), a 63 volt rating, an operating temperature range of -30° to + 85° (decoded from Y5) and a stability of +/-10% (P) over this range. Likewise, 6n8K63 would indicate 6.8nF (from 6n8), +/-10%, (from K) and 63 volts (from 63).



104 = 1 0 0000 pF
= 100nF = 0.1 uF
K = ± 10% Tolerance
63 = 63 Volts
Y = -30°C
5 = +85°C
P = ±10% Stability

Film Capacitor Types

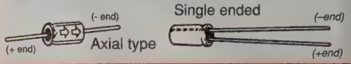
KP	Polypropylene film/foil
KS	Polystyrene film/foil
KT	Polyester film/foil (polyethylene terephthalate PETP)
MK	Metallized plastic film (general)
MKC	Metallized polycarbonate
MKP	Metallized polypropylene
MKT	Metallized polyester (polyethylene terephthalate, PETP)
MKT-P	Metallized polyester/paper
MKY	Metallized low-loss polypropylene
MKL (MKU)	Metallized lacquer (cellulose acetate)

Capacitors & their Uses

Aluminium Electrolytic Capacitors

Ideal for use in filtering or smoothing applications in power supplies. Also used for coupling and bypassing in audio circuits and as a timing element in non critical circuits.

Modern aluminium electrolytic capacitors have high reliability and low leakage. Special low leakage versions are available with leakage which rivals that of tantalum capacitors.



Solid Tantalum Capacitors

Offer smaller size and lower leakage than standard aluminium electrolytics.

Ceramic Capacitors

Offer low cost and high capacitance in a small physical volume. There are generally two types:

High stability, temperature compensating types for use in resonant circuit and filter applications. These have linear temperature characteristics, and their value is largely independent of voltage and frequency.

Bypass and coupling capacitors for use in less critical applications. These are less stable, have non-linear temperature characteristics and are somewhat voltage dependent.

Paper Capacitors

An original construction, now rarely used. Plastic film capacitors have replaced paper capacitors in most applications.

Polyester Capacitors

Low cost, good stability and available in a large range of values. These are the most widely used capacitors for general purpose applications.

Greencaps and MKT type capacitors are examples of polyester (polyethylene terephthalate) film capacitors.

Polycarbonate Capacitors

Offer low temperature coefficient and lower dielectric losses at high frequency. Most often chosen for temperature stability characteristics.

Polystyrene Capacitors

Usually chosen for applications requiring tight tolerance coupled with high stability. Predictable temperature coefficient used in conjunction with particular ferrite cores makes highly stable tuned circuits or oscillators.

Polypropylene Capacitors

Offer very low dielectric losses and good temperature coefficient. Used in power electronics applications, e.g. mains capacitors, switching power supplies, inverters and TV deflection circuits.

Inductors

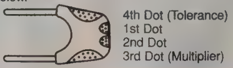
There are a variety of marking systems for small inductors. The value may be marked directly, with a three digit numeric code or a colour code. The tolerance may be marked directly, with a single letter, or a colour code.

The 3-digit numeric code indicates the value in microhenries. The first two digits represent the first two digits of the value and the third is the multiplier, or number of zeroes. For example, the code 472 would be interpreted as 4 7 00 uH, or 4.7mH. Likewise, 103 would represent 10mH.

Where coloured bands are used, the system is essentially the same as that used for the resistor colour code, but with the value expressed in microhenries. An exception is that some inductors include an extra, thicker band at one end to identify milspec characteristics.

Tolerance codes are usually placed after the value code. M is used to represent +/-20%, K or a silver band for +/-10%, J or a gold band for +/- 5%.

Resin-dipped radial lead types are often marked with a sequence of coloured dots. The significance of these dots is shown below.



MOS Handling Precautions

Modern MOS manufacturing technologies have brought new levels of circuit sophistication and convenience to the circuit designer. However, the extremely fine geometries and very high impedances found in these devices results in them being considerably more fragile than earlier devices.

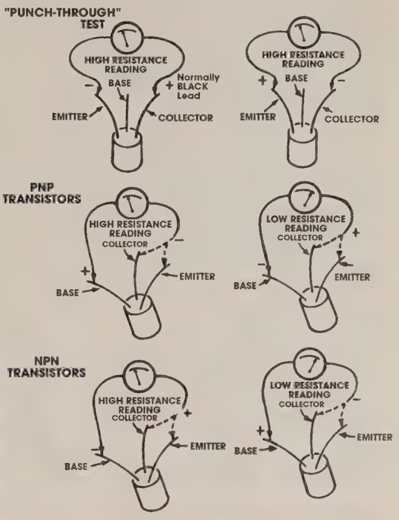
A CMOS IC input is electrically equivalent to a capacitor, of 1 to 5 pF, in parallel with a resistor of around 1 million megohms. Such a huge input impedance is prone to the build up of high electrostatic voltages, which may damage the IC through a variety of failure mechanisms.

Although most MOS devices incorporate protection networks at their inputs, at best these are only effective against static voltages of no more than about 4kV. Even the simple act of walking across a polished floor can cause a static build up on a human body of 4kV-15kV. Consequently, the following handling precautions should be adhered to at all times when handling MOS devices and circuitry.

- Never exceed the published maximum ratings specified for any device, especially a MOS part. Special care may be needed to ensure that switch-on and power down transients are contained within specified limits.
- Tie all unused MOS inputs to low-impedance, valid logic level such as Vss or Vdd.
- Only connect and disconnect test equipment to MOS circuitry while that circuitry is powered up.
- Never remove or insert a socketed MOS IC while power is applied to it.
- When MOS inputs are connected to long, noisy lines, or to circuitry operating from a different power source, series resistors (10K to 100K) should be added to protect the MOS device. In some cases this may be impractical as the added resistance may slow input rise and fall time to an unacceptable degree.
- MOS devices and circuitry should only be stored and transported in antistatic packaging.
- Nylon and similar materials, which allow the generation and build up of static charges, should never be allowed to contact MOS devices.
- MOS devices should be placed on a grounded surface and users should ground themselves to discharge any accumulated static prior to handling the devices. The use of current-limited, grounded wrist-straps is advisable.
- Similarly, soldering irons and other tools should be discharged to ground prior to using them on MOS circuitry.
- MOS devices should be mounted on PCBs after all other components have been loaded and soldered.
- Ground and supply pins of MOS ICs should be soldered before other pins.
- Air humidifiers should be employed in otherwise dry environments. Relative humidities above 40% can significantly reduce the build up of static charges.

Checking Transistors

The diagrams show a simple method for checking transistors using a common analog multimeter switched to a low ohms range. Note that with most analog meters, the red lead is negative and the black is positive when used on resistance ranges. Most digital multimeters can not be used in this way unless they have special ranges for testing semiconductor junctions.



Handy Constants		
Natural logarithm base	e	2.71828
In (x)/log (x)		2.3026
Pi		3.14159265
Pi (for Basic Programmers)		4 x ATN (1)
0dBm		1mW
0dBm voltage in 600 ohms		774.6mV
0dBm voltage in 50 ohms		223.6mV
dBSPL reference level		20uPa
Charge on electron	e	$1.60210x10^{-19}$C
Absolute zero	0K	-273.16°C
Speed of light in Vacuum	c	$2.997925x10^{8}$ms^{-1}
Speed of Sound	c	
- in air @ 0°C		331.6ms^{-1}
- in air @ 20°C		343ms^{-1}
- in fresh water @ 20°C		1481ms^{-1}
- in sea water @ 13°C		1500ms^{-1}
Density of air @ 20°C	p0	1.293kgm^{-3}

RMS, Average and Peak Relationships

he term "RMS" (root-mean-square) is often ncountered in electronics publications. It is the value f any waveform which results in the same power being issipated in a resistive load. For example, a 240V RMS .c. waveform, no matter what its shape, will cause the ame power dissipation in a resistor as 240V d.c.

he table below shows the relationship between the MS and average values for three common waveforms r which the peak value is known. Multiplying the peak alue by the factors given in the table will yield the RMS nd average values.

trictly speaking, the average value of a waveform, hich is symmetrical about the zero axis, is zero. lowever, we often need to know the average of the bsolute value of a waveform, and this is the value hich the table factors will yield.

lost test equipment does not directly measure RMS alues. Meters typically measure average values but re scaled to provide the RMS value of a sine wave. nowing this, we can convert the indicated reading ack to the average value and then convert this to the ue RMS value as long as we know the shape of the neasured waveform.

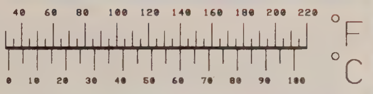
Waveshape	Multiplying Factor to Convert Peak Value to:	
	RMS	Average
Sine	0.707	0.637
Square	1	1
Triangle/ Sawtooth	0.577	0.5

Conversions	
Angstroms/Nanometer	10
millimetres/inch	25.4
centimetres/foot	30.48
metres/yards	0.914
kilometres/mile	1.609
grams/ounce	28.35
kilograms/pound	0.454
litres/pint	0.567
litres/gallon	4.54
litres/cubic foot	28.32
Joules/Electron Volt	$1.60210x10^{-19}$
Watts/Horsepower	746
Coulombs/Amps Hour	3600

Temperature Conversion

°C = 5/9 (°F-32)

°F = 32 + 9/5 °C



Japanese Semiconductors

Japanese Semiconductor part numbers that conform to JIS nomenclature provide useful information about the type of device.

The first character is a numeral which is one less than the effective number of electrodes. Therefore, diodes will begin with '1', transistors with '2'.

The second character is always 'S' to indicate the product is a semiconductor. The third character indicates the type of semiconductor:

A	High Frequency PNP Transistor
B	Low Frequency PNP Transistor
C	High Frequency NPN Transistor
D	Low Frequency NPN Transistor
J	P Channel FET
K	N Channel FET
S	Small Signal Diodes

Using this information, we can work out that a 2SC 1969 must be a HF NPN transistor, and 2SK 134 will be an N channel FET.

Fuses

The humble fuse provides reliable and low cost protection against excessive currents which occur during overloads. There are many different types and styles of fuses, and selecting the right fuse for a particular application can be difficult.

When replacing blown fuses, try to obtain a fuse with a rating as close as possible to the original. If it is not possible to locate an exact replacement, remember this – A higher current fuse will offer less protection to the equipment, increasing the risk of damage and fire. A lower current fuse will offer more protection, but will be more prone to nuisance blowing. Therefore, it is better to substitute a lower value fuse until the correct type is obtained.

The explanations below should assist in understanding the terminology of fuses.

Current Rating indicates the current carrying capacity of a fuse under a particular set of test conditions, at 25°C. Fuses operated at higher temperatures need to be derated, and allowance must be made for any surge that occurs during switch-on. It is generally recommended that fuses be specified at 125% of normal load current in order to avoid nuisance blowing.

Voltage Rating is the maximum circuit voltage at which a fuse can be relied upon to safely interrupt an overcurrent. At voltages higher than the rating, a fuse may not be able to suppress the internal arcing that occurs after the fuse link melts. In electronic circuits, where limiting impedances ensure that the fault current is kept low so that a destructive arc cannot occur, fuses may sometimes be used beyond their specified voltage rating.

Fuse Types. The common 3AG (Size 3 Automotive Glass) fuses are 6.3mm (0.25") in diameter and 32mm (1.25") in length. The smaller M205 fuse is 5mm in diameter and 20mm in length.

Standard fast-acting fuses are designed to open very quickly during an overload. They are not designed to withstand the inrush current or switch-on surge that occurs in some equipment.

Time delay or slow-blow fuses are designed to tolerate the temporary overloads that occur during switch on, but they still blow quickly if subjected to gross overloads during faults. Slow blow fuses are commonly used in the primary circuits of electronic equipment, where the initial surge can be many times the normal load current. Slow blow fuses and fast acting fuses are not interchangable due to their different time characteristics.

It should be understood that the overload needed to cause even a fast-acting fuse to open quickly must be of the order of 200% or more. An overload of only 35% (ie 4A through a 3A fuse) could take an hour to open a fuse.

Electronic Formula

Capacitors & Inductors Reactance & Resonance

Like resistors, capacitors and inductors can be used to impede the flow of current in a circuit. However, unlike resistors, the impedance of these components varies with frequency. The impedance of an inductor increases with increasing frequency whereas the impedance of a capacitor increases with decreasing frequency. While the impedance of a resistor is termed resistance, the impedance of capacitors and inductors is termed reactance. The reactance of a capacitor can be calculated from the formula:

$$X_C = \frac{1}{2.\pi.f.C}$$

For an inductor the formula becomes : $X_L=2.\pi.f.L$ where X_C is the capacitive reactance in ohms, X_L the inductive reactance in ohms, C is the capacitance in farads, L is the inductance in henries and f is the applied frequency in Hz.

Because reactive impedances are imaginary and resistive impedances are real, they cannot be added numerically. The total impedance of a resistor in series with a reactive component is given by: $Z = \sqrt{X^2 + R^2}$

where Z is the complex impedance in ohms, X is the capacitive or inductive reactance and R is the resistance of the resistor in ohms.

When an inductor and a capacitor are placed in parallel, at a particular frequency, termed the resonant frequency, the magnitude of their reactances will be equal and the parallel network will have a very high impedance which decreases either side of the resonant frequency. If the components are placed in series, the network will have a very low impedance which increases at either side of the resonant frequency. The resonant frequency of an LC network is given by:

$$f = \frac{1}{2.\pi.\sqrt{L.C.}}$$

A full treatment of reactive components requires a good understanding of complex algebra. Interested readers should refer to any of the better electronics and RF textbooks.

Decibels

Contrary to much popular usage amongst pseudo-technical persons, the decibel (dB) is not actually a unit of any particular quantity, but rather an expression of the ratio between two quantities, such as power, voltage, current and acoustic pressure.

Many sensors, including our own ears respond to stimuli in a logarithmic fashion, allowing them to detect a huge range of intensities. As the dB compares the logarithms of quantities, it agrees with our perceptive comparisons.

To calculate the ratio, in dB, of two power levels, P1 and P2, the formula is:

dB=10log (P1/P2)

If the quantities are voltages, currents or sound pressure levels, X1 and X2, the formula becomes:

dB=20log (X1/X2)

If the quantities, X1 and X2, are both measured in the same impedances, their dB ratio will be numerically equal to the dB ratio of their equivalent powers. If their impedances, Z1 and Z2, are unequal, the dB ratio of their powers can be found from:

dB=20log (X1/X2) +10log (Z2/Z1)

Negative dB values result when P1 (or X1) is less than P2 (or X2), while positive values indicate that P1 (or X1) is greater than P2 (or X2). Although the dB is not an absolute unit, certain absolute units

using the dB scale have been devised. These include dBuV, dBm and dBSPL.

dBuV is a logarithmic expression of a voltage

compared to 1uV (microvolt). Thus, 76 dBuV is equivalent to 6.31 mV (millivolts).

dBm is an expression of a power level compared to 1mW (milliwatt). -20dBm is therefore equivalent to 10uW. Furthermore, because the unit dBm is specifically a measure of power, OdBm represents 775mV in a 600 ohm impedance but 224mV in a 50 ohm impedance.

dBSPL is a measure of sound pressure level.

Although usually referred to 20.4mPa (micropascals), other reference levels may be specified. Using 20uPa as a reference, 1 Pascal equates to 93.8 dBSPL.

Inductor Design

There are no simple, generalised equations for inductor design. However, equations for a few special cases will allow inductors to be designed for a wide range of applications.

1. Single-layer air cored coils of length at least equal to radius. Useful in RF applications.

$$L = \frac{N^2r^2}{254(0.9r+l)}$$

Where L = inductance in uH
N = number of turns
l = coil length in mm
r = coil radius in mm

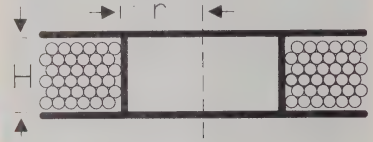
2. Multi-layer air cored coils of height equal to inner radius. Useful for loudspeaker crossovers etc.

$$H=0.34\sqrt{\frac{L}{R}}$$

$$N=19.9\sqrt{\frac{L}{H}}$$

$$d=\frac{0.841H}{\sqrt{N}}$$

Where L = inductance in uH
N = number of turns
H = coil height in mm
d = wire diameter in mm
R = coil's d.c. resistance in ohms



3. Multi-layer air cored similar to (2) but with height equal to one half of the coil's inner radius.

$$H=0.323\sqrt{\frac{L}{R}}$$

$$N=13.2\sqrt{\frac{L}{H}}$$

$$d=\frac{0.738H}{\sqrt{N}}$$

Where the symbols have the same meaning as in (2).

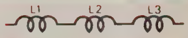
4. Coils wound on high permeability core materials such as ferrites.

$$N=T\sqrt{\frac{L}{A_L}}$$

Where L = inductance of coil
A_L = the inductance of T turns or the particular core

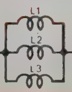
Inductors in Series

$L_T = L_1 + L_2 + L_3 + \ldots$



Inductors in Parallel

$$L_T = \frac{1}{\frac{1}{L_1}+\frac{1}{L_2}+\frac{1}{L_3}\ldots}$$



Two inductors in parallel

$$L_T = \frac{L_1 \times L_2}{L_1 + L_2}$$

Circuit Laws

Ohm's Law

The relationship between voltage, current and resistance in a circuit is defined by Ohm's law, which may be simply stated by the formula:

E = I x R where E is in volts, I is in amps and R is in ohms.

This can be turned around to look like:

$$I = \frac{E}{R} \qquad R = \frac{E}{I}$$

Power In A Circuit

When a current passes through a component, energy is given off in the form of heat. Normally, we associate resistors with this action; that's part of their job. We often need to know how much power is being given off by a resistor - and we find this out by using the formula:

P = E x I where P is in watts, E is in volts and I is in amps.

This formula too can be turned around if required:

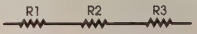
$$E = \frac{P}{I} \qquad I = \frac{P}{E}$$

Resistors in Series

Resistors in a series circuit are simply added together to find the total resistance. In other words, a 10 ohm, 150 ohm and 1000 ohm-resistor connected in series would be the equivalent of a single 1,160 ohm resistor.

The formula is:

$R_T=R_1+R_2+R_3+\ldots$



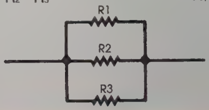
Resistors in Parallel

Resistors in a parallel circuit are a little more difficult. The formula to use is:

$$R_T = \frac{1}{\frac{1}{R_1}+\frac{1}{R_2}+\frac{1}{R_3}\ldots}$$

Two resistors in parallel

$$R_T = \frac{R_1 \times R_2}{R_1 + R_2}$$



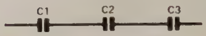
Capacitors in Series

Capacitors in series, on the other hand, are similar to resistor in parallel. You add the reciprocals:

$$C_T = \frac{1}{\frac{1}{C_1}+\frac{1}{C_2}+\frac{1}{C_3}\ldots}$$

Two capacitors in series

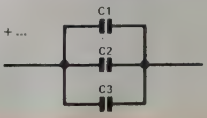
$$C_T = \frac{C_1 \times C_2}{C_1 + C_2}$$



Capacitors in Parallel

Capacitors behave exactly the opposite to resistors; when capacitors are in **parallel,** you add them:

$C_T = C_1 + C_2 + C_3 + \ldots$



Wire and Cable Coaxial Cable Specifications

Type	Nom. Imp Zo	Outer Dia. (mm)	Nom. Attenuation (db/100m) 50 MHz	100 MHz	200 MHz	400 MHz	1Ghz	Vel. Factor %	Cap. pF/m	Volt. Vrms
RG-6A/U	75	7.0	4.73	6.37	8.89	13.1	26 approx	82	53.1	2700
RG-8/U	52	10.3	5.2	7.2	10.5	15.4	29.2	66	96.8	5000
RG-9/U	51	10.67	5.2	7.2	10.5	15.4	29.2	66	98.4	5000
RG-11/U	75	10.29	4.3	6.6	9.5	13.8	23.3	66	67.3	5000
RG-58/U	53.5	4.95	10.2	14.8	22.3	32.8	55.8	66	93.5	1900
RG-58A/U	50	4.95	10.8	416.1	23.9	37.7	70.5	66	101	1900
RG-58C/U	50	4.95	10.8	16.1	23.9	37.7	70.5	66	101	1900
RG-59/U	73	6.15	7.9	11.2	16.1	23.3	39.4	66	68.9	2300
RG-59B/U	75	6.15	7.9	11.2	16.1	23	39.4	66	67.3	2300
RG-62/U	93	6.04	6.2	8.9	12.5	17.7	28.5	84	44.3	700
RG-62B/U	93	6.15	6.6	9.5	13.8	20	36.1	84	44.3	700
RG-122/U	50	4.06	14.8	23	32.8	49.9	87	66	101	1900
RG-141A/U	50	4.83	6.9	10.5	15.4	22.6	42.7	69.5	95.1	1900
RG-142B/U	50	4.95	8.9	12.8	18.4	26.9	44.3	69.5	95.2	1900
RG-174/U	50	2.56	21.7	29.2	39.4	57.4	98.4	66	101	1500
RG-178B/U	50	1.83	34.4	45.9	62.3	91.9	150.9	69.5	95.1	1000
RG-179B/U	75	2.54	27.9	32.8	41.0	52.5	78.7	69.5	64	1200
RG-180B/U	95	3.56	15.1	18.7	24.9	35.1	55.8	69.51	49.2	1500
RG-187A/U	75	2.66	27.9	32.8	41	52.5	78.7	69.5	64	1200
RG-188A/U	50	2.59	31.5	37.4	46.6	54.8	101.7	69.5	95.2	1200
RG-196A/U	50	1.93	34.4	45.9	62.3	91.9	150.9	69.5	95.2	1200
RG-213/U	50	10.29	5.2	7.2	10.5	15.4	29.2	66	101	5000
RG-214/U	50	10.8	5.2	7.2	10.5	15.4	29.2	66	101	5000
RG-223/U	50	5.38	10.1	14.8	21	30.2	53.5	66	101	1900
RG-303/U	50	4.31	6.9	10.5	15.4	22.6	42.7	69.5	95.2	1900
RG-316/U	50	2.49	30.8	34.1	43.3	54.1	101.7	69.5	95.2	1200
BEL 9913	50	10.29	3.0	4.6	5.9	8.5	14.8	84	78.7	–

.B. Except for Belden 9913 and RG-6, all specifications are referenced to MIL-C-17D/F or JAN-C-17A as applicable. Actual cables ten exhibit lower losses than those specified above.

Copper Cable Characteristics

Number & Size of Strands	Nominal Conductor Area (sq. mm)	Nominal Current Rating (Amps)	Maximum Resistance per metre (ohms 35°C)	Nearest Equivalent AWG (B&S)
0 x 0.12	0.11	1.1	0.17	27
x 0.16	0.14	1.4	0.13	26
x 0.5	0.20	2.0	0.10	24
4 x 0.14	0.22	2.2	0.088	24
x 0.2	0.22	2.2	0.086	24
x 0.6	0.28	2.8	0.067	23
x 0.7	0.38	3.8	0.049	21
4 x 0.2	0.44	4.4	0.043	21
0 x 0.25	0.49	4.9	0.039	20
0 x 0.12	0.55	5.0	0.035	20
0 x 0.12	0.68	6.8	0.028	19
9 x 0.1	0.70	7.0	0.027	19
4 x 0.2	0.75	7.5	0.025	18
0 x 0.2	0.94	9.4	0.020	17
x 1.13	1.0	10.0	0.019	17
2 x 0.2	1.0	10.0	0.019	17
12 x 0.05	1.0	10.0	0.019	17
x 0.5	1.4	14.0	0.014	16
0 x 0.25	1.5	15.0	0.013	15
6 x 0.3	1.8	17.0	0.010	15
6 x 0.32	2.1	19.0	0.0091	14
x 0.67	2.5	22.0	0.0077	13
x 1.78	2.5	22.0	0.0076	13
52 x 0.127	3.2	29.0	0.0059	12
1 x 0.32	3.3	30.0	0.0057	12
15 x 0.12	3.6	30.0	0.0053	12
30 x 0.12	7.1	50 max.	0.0027	1
666 x 0.12	18.8	120 max.	0.0010	–

ote: The nominal current ratings are intended as guidelines for low power, electronics, communications and control applications only.

Properties of Copper

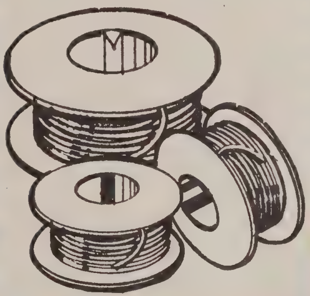
(Based upon the IEC International Annealed Copper Standard.)

Volume Resistivity @ 20°C 0.0000017241 ohm-cm

Mass Resistivity @ 20°C 0.15328 ohm-grams/sq. metre

Temperature Coefficient @ 20°C 0.0039

Tensile Strength: 2350 kg/sq. cm



Winding Wire Data

B&S	SWG	Metric mm	Dia. mils	Ohms per 1000ft	Dia. mm	Ohms per km
Gauges						
12	–	–	80.81	1.588	2.053	5.210
–	14	–	80.00	1.658	2.032	5.440
–	–	2.000	78.74	1.673	2.000	5.448
–	15	–	72.00	2.001	1.829	6.563
13	–	–	71.96	2.003	1.828	6.572
–	–	1.800	70.87	2.065	1.800	6.775
14	–	–	64.08	2.525	1.628	8.284
–	16	–	64.00	2.532	1.626	8.307
–	–	1.600	62.99	2.614	1.600	8.575
15	–	–	57.07	3.184	1.450	10.47
–	17	–	56.00	3.307	1.422	10.85
–	–	1.400	55.12	3.414	1.400	11.20
16	–	–	50.82	4.016	1.291	13.18
–	–	1.250	49.21	4.282	1.250	14.05
–	18	–	48.00	4.501	1.219	14.77
17	–	–	45.26	5.064	1.150	16.61
–	–	1.120	44.09	5.333	1.120	17.50
18	–	–	40.30	6.385	1.024	20.95
–	–	1.000	39.37	6.691	1.000	21.95
–	20	–	36.00	8.002	0.9144	26.25
19	–	–	35.89	8.051	0.9119	26.41
–	–	0.9000	35.51	8.222	0.9000	27.10
–	21	–	32.00	10.13	0.8128	33.23
20	–	–	31.96	10.15	0.8120	33.30
–	–	0.800	31.50	10.45	0.8000	34.30
21	–	–	28.46	12.80	0.7231	41.99
–	22	–	28.00	13.23	0.7112	43.40
–	–	0.7100	27.95	13.27	0.7100	43.55
22	–	–	25.35	16.14	0.6440	52.95
–	–	0.6300	24.80	15.85	0.6300	55.31
–	23	–	24.00	18.00	0.6096	59.07
23	–	–	22.57	20.36	0.5734	66.80
–	–	0.5600	22.04	21.33	0.5600	70.00
–	24	–	22.00	21.43	0.5588	70.30
24	–	–	20.10	25.67	0.5107	84.22
–	25	–	20.00	25.93	0.5080	85.06
–	–	0.5000	19.69	26.76	0.5000	87.81
–	26	–	18.00	32.01	0.4572	105.0
25	–	–	17.90	32.37	0.4548	106.2
–	–	0.4500	17.72	33.04	0.4500	108.4
–	27	–	16.40	38.55	0.4162	126.5
26	–	–	15.94	40.81	0.4050	133.9
–	–	0.4000	15.75	41.28	0.4000	137.2
–	28	–	14.80	47.35	0.3759	155.3
27	–	–	14.20	51.47	0.3608	168.9
–	–	0.3550	13.97	53.10	0.3550	174.2
–	29	–	13.60	56.07	0.3454	184.0
28	–	–	12.64	64.90	0.3211	212.9
–	30	0.3150	12.40	67.45	0.3150	221.2
–	31	–	11.60	77.07	0.2946	252.9
29	–	–	11.26	81.83	0.2861	268.5
–	–	0.2800	11.02	85.34	0.2800	280.0
–	32	–	10.80	88.91	0.2743	291.7
30	–	–	10.03	103.2	0.2548	338.6
–	33	–	10.00	103.7	0.2540	340.2
–	–	0.2500	9.842	107.0	0.2500	351.2
–	34	–	9.200	122.5	0.2337	402.0
31	–	–	8.928	130.1	0.2268	426.8
–	–	0.2240	8.819	133.3	0.2240	437.5
–	35	–	8.400	147.0	0.2134	482.2
32	–	–	7.950	164.1	0.2020	538.4
–	36	–	7.600	179.5	0.1930	589.1
–	–	0.1800	7.087	206.5	0.1800	677.5
33	–	–	7.080	206.9	0.1799	678.8
–	37	–	6.800	224.3	0.1727	735.8

Note: Dick Smith Electronics does not stock all cables and wires shown. Data is presented for comparative purposes.

Choose the Right Cable

The following 6 steps should help when trying to choose a suitable wire size for hooking up marine and auto accessories, extension speakers and the like.

1 Decide how much of the available supply voltage you are prepared to lose. All practical wires have some finite resistance, so it is impossible not to lose some voltage.

2 Divide the figure obtained in (1) by the maximum current which you expect to draw through the wire. This result is the tolerable resistance of your wiring.

3 Divide the result obtained in (2) by the total length (in metres) of the wiring loop. Include the distance from the power source to the load, and back again. This result is the maximum resistance of the desired wire in ohms per metre.

4 From the chart above, select a wire which has a 'Resistance per Metre' figure which is equal to or less than the desired value.

5 Check that the 'Nominal Current Rating' in the table is not exceeded. If it is, then you may need to select a larger wire size with an adequate rating. While the figures given are conservative, they must not be exceeded in 240V applications and may need derating in higher temperature situations.

6 Finally, when purchasing the wire, verify that its insulation is rated to withstand the voltage and temperature for your particular application.

Example:

You wish to install a 12V, 55W light on a boat. The current drawn by the light will be (55/12) 4.6 amps. You calculate that the length of the wiring loop is 5 metres.

Step 1 Lets say that you'll tolerate a loss of 5% of the available 12 volt supply, i.e. 0.6 volts.

Step 2 Divide 0.6 volts by 4.6 amps to obtain 0.13 ohms.

Step 3 Divide 0.13 ohms by 5 metres to obtain 0.026 ohms per metre.

Step 4 Referring to the chart, you will find that 24 x 0.2 mm wire appears to be suitable as its resistance is 0.025 ohms per metre.

Step 5 The Nominal Current Rating for this cable is 7.5 amps and on this basis it is still suitable.

Step 6 As you are dealing with a 12V system and are able to keep the wire away from hot areas and protect it from abrasion, there is unlikely to be any problem related to the insulation.

Bipolar Transistors

Type	Case	Pol Mat	Vce	Vcb	Ic mA	Vces @	Ic mA	Hfe @	Ic mA	FT @ MHz	Ic mA	Ptot mW	Use	Comparable Types
BC107	TO-18	NS	45	50	100	0.25	10	110-450	2	300	10	300	G.P. S.S. Amp.	BC207, BC147, BC182
BC108	TO-18	NS	20	30	100	0.25	10	110-800	2	300	10	300	G.P. S.S. Amp.	BC208, BC148, BC183
BC109	TO-18	NS	20	30	100	0.25	10	200-800	2	300	10	300	Low Noise S.S. Amp	BC209, BC149, BC184
BC109C	TO-18	NS	20	30	100	0.25	10	420-800	2	300	10	300	Low Noise High Gain	BC209C, BC149C, BC184C
BC177	TO-18	PS	45	50	100	0.3	10	75-260	2	150	10	300	G.P. S.S. Amp.	BC157, BC307, BC212
BC178	TO-18	PS	25	30	100	0.3	10	75-500	2	150	10	300	G.P. S.S. Amp.	BC158, BC308, BC213
BC179	TO-18	PS	20	25	100	0.3	10	125-500	2	150	10	300	G.P. S.S. Amp.	BC159, BC309, BC214
BC327	TO-92VAR1	PS	45	50	500	0.7	500	100-600	100	100	10	625	Output	2N3638
BC328	TO-92VAR1	PS	25	30	500	0.7	500	100-600	100	100	10	625	Output	BC327
BC337	TO-92VAR1	NS	45	50	500	0.7	500	100-600	100	100	10	625	Output	2N3642
BC338	TO-92VAR1	NS	25	30	500	0.7	500	100-600	100	100	10	625	Output	BC337
BC546	TO-92VAR1	NS	65	80	100	0.6	100	110-450	2	300	10	500	G.P. S.S. Amp.	
BC547	TO-92VAR1	NS	45	50	100	0.6	100	110-800	2	300	10	500	G.P. S.S. Amp.	BC107, BC207, BC147
BC548	TO-92VAR1	NS	30	30	100	0.6	100	110-800	2	300	10	500	G.P. S.S. Amp.	BC108, BC208, BC148
BC549	TO-92VAR1	NS	30	30	100	0.6	100	200-800	2	300	10	500	Low Noise S.S. Amp.	BC109, BC209, BC149
BC549C	TO-92VAR1	NS	30	30	100	0.6	100	420-800	2	300	10	500	Low Noise High Gain	BC109C, BC149C
BC556	TO-92VAR1	PS	65	80	100	0.65	100	75-475	2	200	10	500	G.P. S.S. Amp.	
BC557	TO-92VAR1	PS	45	50	100	0.65	100	75-800	2	200	10	500	G.P. S.S. Amp.	BC157, DS557
BC558	TO-92VAR1	PS	30	30	100	0.65	100	75-800	2	200	10	500	G.P. S.S. Amp.	BC158, DS558
BC559	TO-92VAR1	PS	30	30	100	0.65	100	125-800	2	200	10	500	G.P. S.S. Amp.	BC159
BC639	TO-92(74)	NS	80	100	1A	0.5	500	40-250	150	130		1W	Audio O/P	MU9610, TT801
BC640	TO-92(74)	PS	80	100	1A	0.5	500	40-250	150	50		1W	Audio O/P	MU9660, TT800
BD139	TO-126	NS	80	100	1.5A	0.5	500	40-250	150	250	50	8W	G.P. O/P	40409
BD140	TO-126	PS	80	100	1.5A	0.5	500	40-250	150	75	50	8W	G.P. O/P	40410
BD262	TO-126	PS	60	60	4A	2.5	1.5A	750	1.5A	7	1.5A	36W	High Gain Darl. O/P	BD266
BD263	TO-126	NS	60	80	4A	2.5	1.5A	750	1.5A	7	1.5A	36W	High Gain Darl. O/P	BD267
BD266A	TO-220	PS	80	80	8A	2	3A	750	3A	7		60W	High Gain Darl. O/P	
BD267A	TO-220	NS	80	100	8A	2	3A	750	3A	7		60W	High Gain Darl. O/P	
BD681	TO-126	NS	100	100	4A	2.5	1.5A	750	1.5A	1		40W	Darlington O/P	BD263
BD682	TO-126	PS	100	100	4A	2.5	1.5A	750	1.5A	1		40W	Darlington O/P	BD262
BF173	TO-72(28)	NS	25	40	25			40-100	7	550	5	230	T.V. I.F. Amp.	
BF199	TO-92VAR2	NS	25	40	25			37	7	550		500	H.F. Amp.	BF180
BF463	TO-202	PS	250	250	500			40-180	30	20		2W	H.V. Med. Pwr.	
BF469	TO-126	NS	250	250	50			50	25	60	10	1.8W	G.P. High-V. Amp.	
BF470	TO-126	PS	250	250	50			50	25	60	10	1.8W	G.P. High-V. Amp.	
BFR90	SOT-37(2)	NS	15	20	25			25-250	14	5GHz	14	180	Wide Band Amp.	
BFR91	SOT-37(2)	NS	12	15	35	0.3	30	25-250	30	5GHz	30	180	Wide Band Amp.	
BFY90	TO-72(25)	NS	15	30	25			25-125	2	1GHz	2	200	Wideband Amp.	
BUX80	TO-3	NS	400	800	10A	1.5	5A	30	1.2A	8		100W	Deflection, High Current SW	
MJ802	TO-3	NS	90	100	30A	0.8	7.5A	25-100	7.5A	2	1A	200W	High Power Output	
MJ2955	TO-3	PS	60	70	15A	1.1	4A	20-70	4A	2.5	500	115W	G.P. Power	
MJ4502	TO-3	PS	90	100	30A	0.8	7.5A	25-100	7.5A	2	1A	200W	High Power Output	
MJ10012	TO-3	NS	400	600	10A	2	6A	100-2K	6A			175W	Power Darlington	
MJ15003	TO-3	NS	140	140	20A	1	5A	25-150	5A	2	500	250W	High Power Output	
MJ15004	TO-3	PS	140	140	20A	1	5A	25-150	5A	2	500	250W	High Power Output	
MJE340	TO-126	NS	300		500	0.75	100	30-240	50			20W	G.P. H.V. Power	
MJE350	TO-126	PS	300		500	0.77	100	30-240	50			20W	G.P. H.V. Power	
MJE2955T	TO-220	PS	60	70	10A	1.1	4A	20-100	4A	2	500	75W	G.P. Power	TIP2955
MJE3055T	TO-220	NS	60	70	10A	1.1	4A	20-100	4A	2	500	75W	G.P. Power	TIP3055
MPSA14	TO-92(72)	NS	30	30	500	1.5	100	20000	100	125	10	625	G.P. Darlington	
MPSA65	TO-92(72)	PS	30	30	500	1.5	100	20000	100	100	10	625	G.P. Darlington	
MRF629	TO-39A	NS	16	36	400			20-200	100			5W	UHF Power	
MRF660	TO-220A	NS	16	36	2.4A			20-160	250			25W	UHF Power	
PN100	TO-92(72)	NS	35	60	500	0.5	100	60-240	150	350	50	600	G.P. Amp/Switch	PN2222, 2N3643
PN2907	TO-92(72)	PS	40	60	600	0.4	150	100-300	150	200	50	625	High S. Switch	
PN200	TO-92(72)	PS	35	60	500	0.5	150	50-400	150	200	50	600	G.P. Amp/Switch	2N3638, BC214, PN3645
TIP31B	TOP-66	NS	80	80	3A	1.2	3A	25	1A	3	500	40W	Power Output	
TIP32B	TOP-66	PS	80	80	3A	1.2	3A	25	1A	3	500	40W	Power Output	
TIP142	TOP-3	NS	100	100	10A	2	5A	>1000	5A			125W	Audio Output	TIP140, TIP141
TIP147	TOP-3	PS	100	100	10A	2	5A	>1000	5A			125W	Audio Output	TIP145, TIP146
TIP2955	TOP-3	PS	70	100	15A	1.1	420	20	4A	3	500	90W	Power Output	MJE2955
TIP3055	TOP-3	NS	70	100	15A	1.1	4A	20	4A	3	500	90W	Power Output	MJE3055
2N2222A	TO-18	NS	40	75	800	1.6	500	100-300	150	300	20	500	High S. Switch	
2N3019	TO-39	NS	80	140	1A	0.5	500	50-100	500	100	50	800	H.F. Amp	
2N3053	TO-39	NS	40	60	700	1.4	150	50-250	150	100	50	2.86W	G.P. Sw	BD137
2N3054	TO-66	NS	60	90	4A	0.1	200	25-100	500	0.8	200	25W	Audio Output	TIP31B
2N3055	TO-3	NS	60	70	15A	1.1	4A	20-70	4A	2.5	500	115W	G.P. Power	BDY20
2N3563	TO-106	NS	15	30	50			20-200	8	600	8	200	RF - IF Amp	BF173
2N3564	TO-106	NS	15	30	100	0.3	20	20-500	15	400	15	200	RF - IF Amp	BF167
2N3565	TO-106	NS	25	30	50	0.35	1	150-600	1	400	1	200	Low Level Amp	BC108, BC208
2N3566	TO-105	NS	30	40	200	1	100	150-600	10	40	30	300	G.P. Amp & Sw	BC183
2N3567	TO-105	NS	40	80	500	0.25	150	40-120	150	60	50	300	G.P. Amp & Sw	BC337
2N3568	TO-105	NS	60	80	500	0.25	150	40-120	150	60	50	300	G.P. Amp & Sw	
2N3569	TO-105	NS	40	80	500	0.25	150	100-300	150	60	50	300	G.P. Amp & Sw	
2N3638A	TO-105	PS	25	25	500	0.25	50	100	50	150	50	300	G.P. Amp & Sw	BC328
2N3641	TO-105	NS	30	60	500	0.22	150	40-120		250	50	350	G.P. Amp & Sw	BC337
2N3642	TO-105	NS	45	60	500	0.22	150	40-120		250	50	350	G.P. Amp & Sw	BC337
2N3643	TO-105	NS	30	60	500	0.22	150	100-300	150	250	50	350	G.P. Amp & Sw	BC337
2N3644	TO-105	PS	45	45	500	1	300	100-300	150	200	20	300	G.P. Amp & Sw	BC327
2N3645	TO-105	PS	60	60	500	1	300	100-300	150	200	20	300	G.P. Amp & Sw	
2N3771	TO-3	NS	40	50	30A	2	15A	15-60	15A	0.2	1A	150W	Power Output	
2N3866	TO-39	NS	30	55	400			10-200	50	500	50	1W	VHF Amp	
2N3904	TO-92(72)	NS	40	60	200	0.2	10	100-300	10	300	10	310	Low Level Amp	BC167A, BF194
2N3905	TO-92(72)	PS	40	40	200	0.4	50	50-200	10	200	20	310	G.P. Amp & Sw	
2N3948	TO-39	NS	20	36	400			15	50	700	50	1W	VHF Amp	
2N4030	TO-39	PS	60	60	1A	0.5	500	25	500	260	100	800	G.P. Amp & Sw	
2N4250	TO-106	PS	40	40	100	0.25	10	250-700	0.1	50		200	Low Level Amp	BC559
2N4258	TO-106	PS	12	12	50	0.5	50	30-120	10	700	10	200	Saturated Sw	
2N4427	TO-39	NS	20	40	400	0.4	100	10-200	100	500	50	1W	VHF/UHF Driver	2N3866
2N5401	TO-92(72)	PS	150	160	6000	0.5	50	60-240	10	100	10	625	H.V. Switch	MPSL51
2N6557	TO-202	NS	250	250	500			>40	50	45		2W	H.V. Med Pwr	
2SC710	TO-92/76	NS	25	30	30			90	1	100		200	G.P. RF Amp	BFS18
2SC1306	TOP-66	NS	65	65	3A			40-200	500	300		12W	H.F. Output	2SC2166
2SC1307	TOP-66	NS	70	70	8A			20-150	2A	150		25W	H.F. Output	2SC1969
2SC1674	TO-92(74)	NS	20	30	20	0.3	10	40-180	1	600	1	250	VHF Amp	
2SC1969	TOP-66	NS	30	60	6A			10-180	10	150		20W	H.F. Output	2SC1307
2SC2166	TOP-66	NS	75	75	4A			35-180	100					
2SC2694	T-40	NS	17	35	20A			10-180	1A	800		140W	VHF Output	MRF247
2SC3355	TO-92(74)	NS	12	20	100			50-300	20	6.5GHz	20	600	UHF SS	MRF573
2SC3358	MX	NS	12	20	100			50-300	20	7GHz	20	250	UHF SS	MRF573

Triacs

Type	CASE	VDRM	IT (r.m.s.) (A)	IFSM (A)	IGT (mA)	VGT (T = 25°C)	PG (av) (W)	IH (mA)	dv/dt (V/uS)	Comments (25°C)
BT137-500	TO-220	500	8	55	35 (70-+)	1.5	0.5	20	100	(Gate o/c)
BT139-500	TO-220	500	16	140	35 (75-+)	1.5	0.5	30	100	(Gate o/c)
BT139-600	TO-220	600	16	140	35 (75-+)	1.5	0.5	30	100	(Gate o/c)
BTA10-600B	TO-220	600	10	100	50 (100-+)			50	100 @400V	(Isolated Tab)
BTA41-600B	TOP-3	600	40	300	50 (100-+)	1.5	1.0	80	250	(Isolated Tab)
Q4006L4	TO-220	400	6	65	25 (50-+)	2.5 max all modes	0.9	60 max	100 typ	(Gate o/c)
SC141D	TO-220	400	6	74	50 (50-+)	2.5 "	0.5	50 max	100 typ	(Gate o/c)
SC146D	TO-220	400	10	110	50 (50-+)	2.5 "	0.5	50 max	150 typ	(Gate o/c)
SC151D	TO-220	400	15	110	50 (50-+)	2.5 "	0.5	50 max	250 typ	(Gate o/c)

Note: Some small signal transistors may have a TO-92 case and a "PN" prefix. The electrical specifications are the same, only the case is changed. See case outline TO-92(72) for pin detail.
Not all devices in this section are stocked by Dick Smith Electronics.

FETS

FETS	Case	BVGSS V	@ IG (uA)	VGS (OFF) Min	Max	@ VDS	ID (nA)	IDss(mA) Min	Max	@ VDS	VGS	YFS (umhos) Min	Max	@ VDS	Ptot mW	Use/Comments
BF245B	TO-92 Var 1	30	1	0.5	8	15	10	6	15	15	0	3000	6500	15	300	N/CH Junction Audio to H.F.
BF981	SOT-103	>6		2.5		10	20uA	4	25	10	0	14000 typ.			225	N/CH Dual Gate MOS. VHF AMP.
BF998	SMT	>6	±10		2.5	8	20uA	2	18	10	0/4	24000 typ.		8	200	N/CH VHF/UHF Dual Gate SMT
BFR84	TO-72(2)	>6	100	1.5	3.8	10		20	55	10	0	15000 typ.		10	300	N/CH VHF Dual Gate
MFE131	TO-72(2)	±6	±10		4	15	200uA		30	15	0	8000	20000	15	300	N/CH Dual Gate MOS. VHF Amp.
MPF102	TO-92(72)	25	10	0.5	8	15	2	2	20	15	0	2000	7500	15	310	N/CH Junction – VHF
MPF105	TO-92(72)	25	1		8	15	10	4	16	15	0	2000	6000	15	310	N/CH Junction – Audio Sw.
MPF106	TO-92(72)	25	1	0.5	4	15	10	4	10	15	0	2500	7000	15	310	N/CH Junction – RF
MPF131	262	±6	±10		4	15	200uA	3	30	15	0	8000	20000	15	350	N/CH Dual Gate MOS. VHF Amp
2N4342	TO-92(72)	25	10		5	10		12	30	10	0		6000	10	180	P/CH Junction – Audio Sw.
2N5245	TO-92(77)	30	1	1.5	6	10		1	18		0	5800 typ.		10	360	N/CH VHF/UHF MIXER
2N5459	TO-92(72)	25	1	2	8	15	10	4	9	15	0	2000	6000	15	310	N/CH Junction – Audio Sw.
2N5484	TO-92(72)	25	1	0.3	3	15	10	1	5	15	0	3000	6000	15	310	N/CH Junction – VHF
2N5485	TO-92(72)	25	1	0.5	4	15	10	4	10	15	0	3500	7000	15	310	N/CH Junction – VHF
2N5486	TO-92(72)	25	1	2	6	15	10	8	20	15	0	4000	8000	15	310	N/CH Junction – VHF
3SK40	TO-72(2)	±6	±10		4	15	200uA		25	15	0	8000		15	250	N/CH Dual Gate MOS. VHF Amp.
3SK121	2-6F1A	–5		–2.5	4	5	100uA	20	45	5	0	17000 typ.		10	200	N/CH UHF GaAs Dual Gate

Power FETS

Type	Case	Ptot (W)	Vds (max) (V)	Id (max) (A)	Vgs (thres.) min	max	Gfs umhos	Ciss (pF)	Rds (ohms)	Comment
BUK456-60A	TO-220	150	60	52	2.1	4	17M	2000	0.028	Inverters
BUK456-60A	TO-220	150	60	52	2.1	4	17M	2000	0.028	Inverters
BUK457-600B	TO-220	150	600	7.1	2.1	4	8M typ.	1800	1.2	Mains SMPS
BUZ71A	TO-220	40	50	13	2.1	4	4M	600	0.12	Nch Power MOSFET
IRF520	TO-220	60	100	9.2	2	4	4M	350	0.25	Nch Power MOSFET
MTP3055E	TO-220	40	60	12	2	4.5	4M	500	0.15	Nch Power MOSFET
VN10K	TO-92(76)	1	60	0.3	0.3	2.5	100K	48	5	Nch DMOS FET
VN88AF	TO-202F	12.5	80	2	0.8	2				Nch VMOS FET
2SJ48	TO-3	100	120	7	0.15	1.45	1M	900	1	Pch Power MOSFET
2SJ49	TO-3	100	140	7	0.15	1.45	1M	900	1	Pch Power MOSFET
2SJ162	TOP-3	100	160	7	0.15	1.45	1M	900	1	Pch Power MOSFET
2SK133	TO-3	100	120	7	0.15	1.45	1M	600	1	Nch Power MOSFET
2SK134	TO-3	100	140	7	0.15	1.45	1M	600	1	Nch Power MOSFET
2SK1058	TOP-3	100	160	7	0.15	1.45	1M	600	1	Nch Power MOSFET

Small Signal Diodes

Type	Case	VR	IF (mA)	Cd (pF)	VF	@ IF (mA)	IR (uA)	@ VR	Trr (ns)	Use /Comparable Types
Germanium										
OA47	DO-7	25	110	3.5	0.45	10	100	25	70	Gold Bonded G.P. Switching
OA90	DO-7	20	45		1.5	10	450	20		G.P. Point Contact OA70, OA80
OA91	DO-7	90	50		1.9	10	180	75		G.P. Point Contact OA71, 79, 81
DSOA91	DO-7	50	30	1	1	5	200	10		G.P. OA91, 1N60
1N60	DO-7	40	30	1	0.05	0.375	200	10		AM/FM Detector
OA95	DO-7	90	50		1.5	10	110	0.75		G.P. Point Contact
Silicon										
BA102	DO-7	20		20-45	Cd Ratio 1.4	@ 4V/10V				Variable Capacitance
BA234/4	DO-35	20	100	<2	1	100	0.1	15		UHF Sw.
BAW62	SOD-27	75	200	2	0.75	5	5	75	4	High Speed Silicon Sw.
BB119	DO-35	15		20-25 @ 4V	Cd Ratio >1.3	@ 4V/10V				Varicap – replaces BA102
BB122	DO-35	30		12 @ 3V	Cd Ratio 5.2		0.05	28		Varicap VHF UHF
BB212	TO-92	12		500-620 @ 0.5V	Cd Ratio >22.5	@ 0.5V/8V	0.05	10		AM Dual Varicap
1N914A	DO-35	75	75	4	1	10	5	75	4	Small Signal Sw. 1N4148
1N4148	DO-35	75	200	4	1	10	0.025	20	4	Small Signal Sw. 1N914A
1N4448	DO-35	75	300	4	1	100	0.025	6	4	G.P. Silicon Sw. 1N4148
5082-2800	DO-7	70	15	2	0.41	1	0.2	50	0.1	Schottky (Hot Carrier) UHF Detector, Mixer Switch

Rectifiers

Type	VR	IF (A)	IFSM (A)	VF	@ IF (A)	IR (uA)	@ VR	Use
BYX98/300	300	10	75	1.4	10	200	300	Power Rectifier Stud Mount
1N4002	100	1	30	1.1	1	5	100	G.P. Rectifier
1N4004	400	1	30	1.1	1	5	400	G.P. Rectifier
1N4007	1000	1	30	1.1	1	5	1000	G.P. Rectifier
BY229-400	400	7	60	1.85	20			SMPS trr = 150nS
1N4936	400	1	30	1.3	1	5	400	SMPS trr = 200nS
1N5404	400	3	200	1.1	3	5	400	G.P. Rectifier
1N5408	1000	3	200	1.1	3	5	1000	G.P. Rectifier
P600M	1000	6	400	0.9	6	25	1000	G.P. Rectifier
FB5006	600	50	500	1.2 (per leg)	25	10	600	High Current Bridge
3504	400	35	400	1.2 (per leg)	17.5	10	400	High Current Bridge
PO4	400	6		1.3 (per leg)	6	10	400	Medium Duty Mini Bridge
KBL10/407	1000	4	200	1.1 (per leg)	2	10	1000	G.P. Bridge SIL pins
WO4	400	1.5	50	1.1 (per leg)	1	10	400	Mini Bridge
DB155G	600	1.5	50	1.1 (per leg)	1	10	600	Mini Bridge DIL pins
1N5819	40	1	25	0.6	1	1mA	40	Schottky Barrier
1N5822	40	3	80	0.525	3	2mA	40	Schottky Barrier

SCRs

Type	Case	VDRM	IT (r.m.s.) (A)	IFSM (A)	IGT (mA)	VGT	PG (av) (W)	IH (mA)	dv/dt (V/uS)	COMMENTS (25°C)
BT151-500R	TO-220	500	12	100	15 max	1.5 max	0.5	20 max	200	(RGK=100)
BT169B	TO-92A	200	0.8	8	.2 max	0.8 max	0.1	5 max	25	(RGK=1k)
C103B	TO-92	200	0.8	8	.2 max	0.8 max	0.01	5 max	20	(RGK=1k)
C106Y	TO-202	30	4	20	.2 max	0.8 max	0.1	5 max	8	(RGK=1k)
C106D	TO-126/TO-202	400	4	20	.2 max	0.8 max	0.1	3 max	8	(RGK=1k)
C122D	TO-220	400	8	82	25 max	1.5 max	0.5	3 max	50	(Gate o/c)
C122E	TO-220	500	8	82	25 max	1.5 max	0.5	30 max	50 typ	(Gate o/c)
C203B	TO-92A	200	0.8	8	.2 max	0.8 max	0.01	5 max	20 typ	
C220D	TO-48	400	10	82	25 max	1.5 max	0.5	30 max	50 typ	
PO103AA	TO-92A	100	0.8		.02-.2	0.8 max	0.1	5 max	100 typ	
PO103AB	TO-92	100	0.8		.02-.2	0.8 max	0.1	5 max	100 typ	
S4008	TO-220	400	8	85	25 max	1.5 max	0.5	30 max	50 typ	(Gate o/c)
S6008L	TO-220	600	8	85	25 max	1.5 max	0.5	30 max	50 typ	(Gate o/c)
SPS420	TO-48	400	20	200	25 max	2.0 max	0.5	50 max	200	(Gate o/c)
TIC126E	TO-220	500	8		20 max	1.5 max	0.5	40 max	100 typ	(Gate o/c)
TYN608	TO-220	600	8	80	15 max	1.5 max	–	30 max	200 typ	
TYN608G	TO-220	600	8	80	25 max	1.5 max	–	45 max	500	

Note: Not all devices in this section are stocked by Dick Smith Electronics

Zener Data

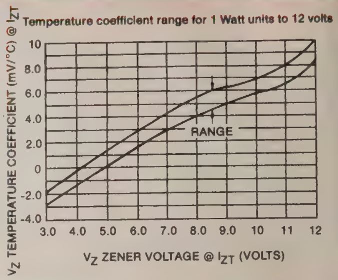
Type No. ▲ 400mW Series	Type No. ▼ 1 Watt Series	Nominal Zener Volt. VZ@IZT (V)	Test Current IZT (mA) 400mW	1W
1N746	1N4728	3.3	20	
1N747	1N4729	3.6	20	
1N748	1N4730	3.9	20	
1N750	1N4732	4.7	20	53
1N751	1N4733	5.1	20	49
1N752	1N4734	5.6	20	45
1N753	1N4735	6.2	20	41
1N754,1N957	1N4736	6.8	18.5	37
1N755,1N958	1N4737	7.5	16.5	34
1N756,1N959	1N4738	8.2	15	31
1N757,1N960	1N4739	9.1	14	28
1N758,1N961	1N4740	10	14	25

▲ DC Power Dissipation: 400 milliwatts @ 50°C Ambient)
(Derate 3.2mW/°C above 50°C)

Type No. ▲ 400mW Series	Type No. ▼ 1 Watt Series	Nominal Zener Volt. VZ@IZT (V)	Test Current IZT (mA) 400mW	1W
1N962	1N4741	11	12.5	23
1N759, 1N963	1N4742	12	11.5	21
1N964	1N4743	13	10.5	19
1N965	1N4744	15	9.5	17
1N966	1N4745	16	8.5	15.5
1N967,1N4112	1N4746	18	7.8	14
1N968	1N4747	20	7	12.5
1N969	1N4748	22	6.2	11.5
1N970	1N4749	24	5.6	10.5
1N971	1N4750	27	5.3	9.5
1N972	1N4751	30	5.3	8.5
1N973	1N4752	33	5.2	7.5

▼ DC Power Dissipation: 1 Watt @ 50°C Ambient)
(Derate 6.67mW/°C above 50°C)

This range will dissipate up to 3W @ 75°C with 10mm lead length as heatsink.

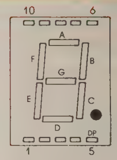


Discrete Optoelectronics

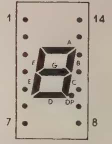
7-Segment LEDs

	LTS312AR Z-4117	LTS313AR Z-4103	LTS5303AR Z-4150	LTS5503AE Z-4151	LTS546AR Z-4145	LTS547AE
Characteristics						
Common Terminal Pol.	Anode	Cathode	Cathode	Cathode	Anode	Cathode
Digit Size	7.6mm	7.6mm	14.2mm	14.2mm	13.2mm	7.6mm
Colour	Red	Red	Red	Orange	Red	Green
Av. Fwd. Seg. Current	25mA	25mA	25mA	25mA	25mA	25mA
Segment Voltage	1.7	1.7	1.7	2.1	1.7	2.1
Min. Rev. Brkdn. Volt.	5	5	5	5	5	5
Max. Rev. Current	100uA	100uA	100uA	100uA	100uA	100uA
Seg. Intensity (typ.)	450ucd	450ucd	500ucd	2200ucd	500ucd	2000ucd
Max. Seg. Dissipation	55mW	55mW	55mW	75mW	55mW	75mW
Connections						(guide only)
Seg. A	1	10	7	7	7	10
Seg. B	13	9	6	6	6	9
Seg. C	10	8	4	4	4	8
Seg. D	8	5	2	2	2	5
Seg. E	7	4	1	1	1	4
Seg. F	2	2	9	9	9	2
Seg. G	11	3	10	10	10	3
Dec. Pt.	9	7	5	5	5	7
Common	3, 14	1, 6	3, 8	3, 8	3, 8	1, 6

Note: Not all devices in this section are stocked by Dick Smith Electronics.



Z 4150 Z 4151 Z 4145



Z 4117 Z 4103

4½ Digit Liquid Crystal Display

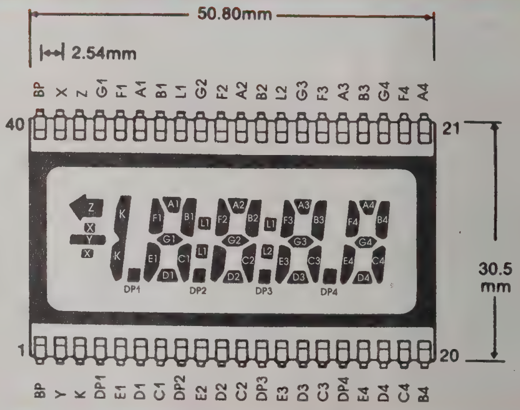
The Z-4175 is a static (direct drive) 4½ digit LCD display featuring 10mm high digits, two colons, four decimal points, plus/minus indicator and an 'arrow'. The display is fitted with DIL pins for direct insertion into a PCB or socket.

This 4½ digit display can be used as a replacement for most 3½ digit displays. The digit pinouts and sign functions are identical except for the '1' which will display in the fifth digit position instead of the fourth.

Care must be taken with LCDs to avoid damage to the glass through excessive mechanical or thermal stress. IC's such as the 7106 A/D converter are ideal for use with the Z-4175 as they provide the required drive voltages and conditions. If discrete circuitry is used to drive the display, it must ensure that the D.C. component of the drive is less than 50mV. The application of a D.C. voltage will cause damage. Normally, the 'common' or 'backplane' terminal is driven by a square wave within the specified frequency and voltage range. Those segments which are 'off' are then fed with a signal in-phase with that driving the backplane, while those segments which are intended to be 'on' are driven by a signal 180° out of phase with the backplane signal.

Specifications

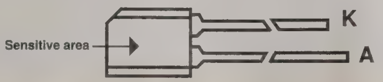
Operating Voltage:	3.0V
Maximum Allowable DC:	50mV
Operating Frequency Range:	30 to 300Hz
Contrast Ratio:	20:1
DIL Pin Spacing:	2.54mm
DIL Pin Length:	6.35mm
Storage Temperature:	–20°C to +60°C
Operating Temperature:	–10°C to +60°C


50.80mm
2.54mm
BP X Z G1 F1 A1 B1 L1 G2 F2 A2 B2 L2 G3 F3 A3 B3 G4 F4 A4
40
21
Z
X
Y
X
K
K
A1 F1 B1 L1 G1 E1 C1 D1 DP1
A2 F2 B2 L2 G2 E2 C2 D2 DP2
A3 F3 B3 G3 E3 C3 D3 DP3
A4 F4 B4 G4 E4 C4 D4 DP4
30.5 mm
1
20
BP Y K DP1 E1 D1 C1 DP2 E2 D2 C2 DP3 E3 D3 C3 DP4 E4 D4 C4 B4

Z-1956 Silicon P-I-N Infra Red Photo Diode

Silicon pin photo diode encapsulated in a black plastic package which acts as an infra-red filter.

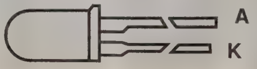
Reverse Voltage	Vr max	30V
Power Dissipation @ 25°C	Ptot	150mW
Junction Temperature	Tj	100°C
Dark Reverse Current (Vr=10V Ee=0)	Idr	30nA
Light Reverse Current (Ee=1mW/cm²)	Ilr	50uA
Wavelength of Peak Response	λ pk	950nm



Z-3235 GaAs Infra Red Emitting Diode

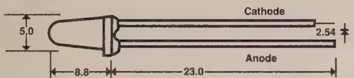
High Intensity Gallium Arsenide infra-red emitting diodes intended for remote control applications. Smoke coloured end looking encapsulation.

Forward Voltage	Vf	1.2V @20mA
Continuous Reverse Voltage	Vr	5V
Forward Current (d.c.)	If max	50mA
Peak Forward current (300pps, 1us pulse)	Ifpk	3A
Total Power Dissipation up to Tamb=25°C	Ptot max	100mW
Junction Temperature	Tj	100°C
Radiant incidence @ If=20mA	Eo	1mW/cm²
Wavelength of Peak Emission	λ pk	940nm

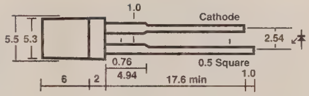


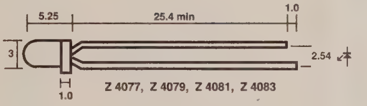
High Performance LEDs

Type	Nominal Size (mm)	Lens	Fwd. Voltage (@20mA)	Max. Cont. Fwd. Current (mA)	Max. Rev. Voltage	Luminous Intensity (mcd)	@ current (mA)	Peak Wavelength (nm)
Z-4190 Red	2 dia.	Red Diffused	2.0	30	5	1.3	10	635
Z-4192 Green	2 dia.	Green Diffused	2.1	30	5	1.3	10	569
Z-4001 White	3 dia.	Water Clear	3.6	30	5	600	20	-
Z-4077 Red	3 dia.	Red Diffused	2.1	15	5	2	10	697
Z-4079 Green	3 dia.	Green Diffused	2.2	30	5	6	10	565
Z-4081 Yellow	3 dia.	Yellow Diffused	2.2	20	5	5	10	585
Z-4083 Orange	3 dia.	Orange Diffused	2.0	30	5	5	10	635
Z-4194 Red	3 dia.	Red Diffused	2.0	30	5	1.7	10	635
Z-4196 Green	3 dia.	Green Diffused	2.1	30	5	1.7	10	565
Z-4005 Blue	5 dia.	White Diffused	3.0	–	–	3	20	470
Z-4006 Blue	5 dia.	Water Clear	3.6	30	5	650	20	470
Z-4008 Green	5 dia.	Water Clear	3.5	30	5	2200	20	525
Z-4009 Yellow	5 dia.	Water Clear	2.1	30	5	5000	20	590
Z-4070 Red/Green	5 dia.	White Diffused	2.1/2.1	–	–	1.1/5.0	20	697/565
Z-4072 Red	5 dia.	Water Clear	1.8	40	4	1000	20	660
Z-4074 Red	5 dia.	Water Clear	1.8	40	4	2300	20	660
Z-4085 Red	5 dia.	Red Diffused	2.1	15	5	3	10	697
Z-4087 Green	5 dia.	Green Diffused	2.2	30	5	10	10	565
Z-4089 Yellow	5 dia.	Yellow Diffused	2.2	20	5	8	10	585
Z-4091 Orange	5 dia.	Orange Diffused	2.0	30	5	10	10	635
Z-4060 Red	10 dia.	Red Diffused	2.0	30	5	40	20	625
Z-4061 Green	10 dia.	Green Diffused	2.2	25	5	40	20	565
Z-4062 Yellow	10 dia.	Yellow Diffused	2.1	30	5	40	20	590
Z-4066 Red	10 dia.	Water Clear	1.85	30	5	3000	20	660
Z-4093 Red	1.8 x 5.5	Red Diffused	2.1	15	5	0.4	10	697
Z-4095 Green	1.8 x 5.5	Green Diffused	2.2	30	5	1	10	565
Z-4097 Yellow	1.8 x 5.5	Yellow Diffused	2.2	20	5	0.8	10	585

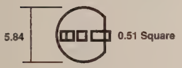


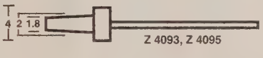
Z 4005 Z 4072



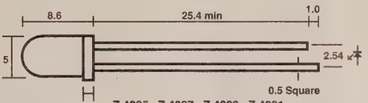


Z 4077, Z 4079, Z 4081, Z 4083

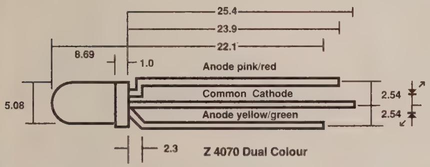




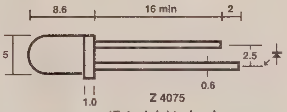
Z 4093, Z 4095



Z 4085, Z 4087, Z 4089, Z 4091



Z 4070 Dual Colour



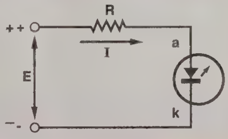
Z 4075
*Extra bright, clear lens

Flashing LEDs

	Z-4040 Red	Z-4042 Green	Units
Nominal Size	5	5	mm
Operating Voltage Range	3-10	3-10	V
Intensity (typ. @ 10V)	36	10	mcd
Peak Wavelength	660	565	nm
Flash Rate (approx @ 10V)	2	2	Hz
Duty Cycle	25	25	%
Max. Rev. Voltage	0.6	0.6	V

Using LEDs

When using a Light Emitting Diode (LED) as an indicator, use the following formula to determine series resistance for various voltages: R = (E-1.7) x 1000/I, where R is the resistance in ohms, E is the supply voltage (DC) and I is the LED current in milliamps.



Eg. to operate the LED at 20mA,
for 6V, use 220 ohms
9V, use 390 ohms
12V, use 560 ohms
24V, use 1.2k ohms

Z-4801 Light Dependent Resistor (LDR)

Ratings		Characteristics	
Max. Voltage	100V	Dark Resistance	> 10 Mohm
Power Dissipation (at 25°C)	50mW	Resistance @ 10 Lux	48-140k ohm
		Peak Spectral Response	560-620 nm

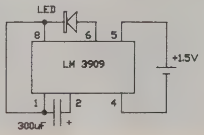
The approximate relationship between illumination and resistance is given by,

$$R = AL^{-0.85} \text{ where;}$$

R = resistance, A = a constant (approx. 340-991 x 10^3), L = light level in Lux

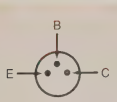
LM 3909 LED Flasher/Oscillator

The LM 3909 is designed to flash LEDs from a low voltage supply with small current drain. By using the timing capacitor for voltage boost, it delivers pulses of 2V or more to the LED while operating on a supply of 1.5V or less. The circuit shown here, powered from an AA cell, should flash an LED continuously for several months.

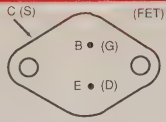


Semiconductor Outlines

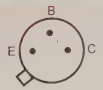
Bottom view unless otherwise stated



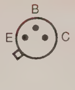
TO-1



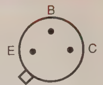
TO-3



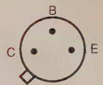
TO-5



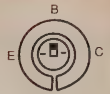
TO-18



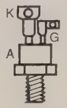
TO-39



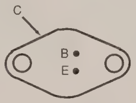
79-03
TO-39(A)



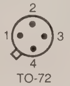
TO-39(mod)



TO-48 SCR
SIDE VIEW

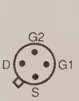


TO-66



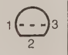
TO-72

PIN	T(25)	T(28)	FET N(25)
1	E	B	S
2	B	E	D
3	C	C	G
4	CASE	CASE	CASE



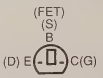
TO-72 (2)

TO-72

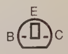


TO-92

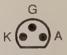
PIN	71		72 (std.)		74		76		77	
1	C	G	C	G	B	S	E	D	E	D
2	E	D	B	S	C	G	C	G	B	S
3	B	S	E	D	E	D	B	S	C	G



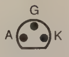
TO-92 VAR.1



TO-92 VAR.2

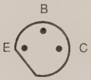


TO-92 SCR

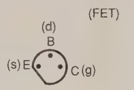


TO-92 A SCR

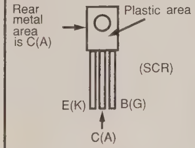
TO-92 SERIES



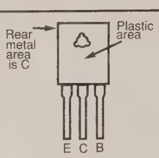
TO-105



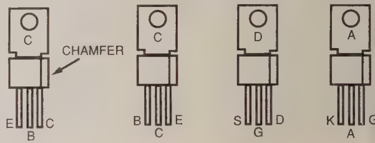
TO-106


Rear metal area is C(A)
Plastic area
(SCR)
E(K)
B(G)
C(A)

TO-126

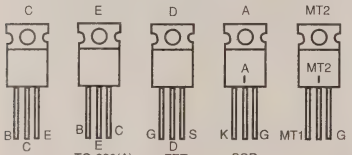

Rear metal area is C
Plastic area
E
C
B

90 - 05
TO-127
FRONT VIEW


C
CHAMFER
E
C
B
C
B
E
C
D
S
D
G
A
K
G

TO-202 TO-202R TO-202FET TO-202SC

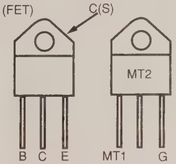
TO-202


C
B
E
C
E
B
C
E
D
G
S
D
A
A
K
G
MT2
MT2
MT1
G

TO-220 TO-220(A) FET SCR TRIAC

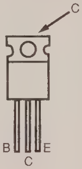
TO-220

FRONT VIEW


(FET)
C(S)
B
(G)
C
(S)
E
(D)
MT2
MT1
G
TRIAC

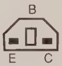
TOP-3

FRONT VIEW

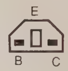


TOP-66

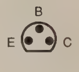
FRONT VIEW



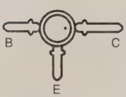
SOT- 25



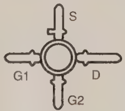
SOT- 25/1



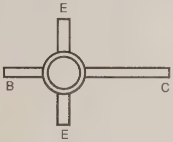
SOT-30



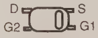
SOT-37 (2)
TOP VIEW



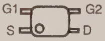
SOT-103
TOP VIEW



MX
TOP VIEW

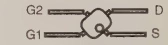


206(B)



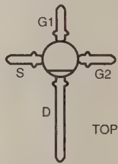
206

TOP VIEW



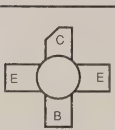
262

TOP VIEW

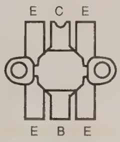


TOP VIEW

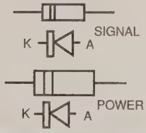
2-6F1A



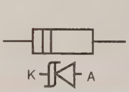
MT-72C
TOP VIEW



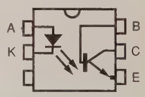
TOP VIEW **T-40**


SIGNAL
K
A
POWER
K
A

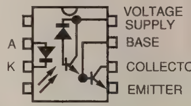
DIODES



ZENER DIODES



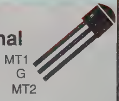
D6
TOP VIEW

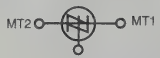

A
K
VOLTAGE SUPPLY
BASE
COLLECTO
EMITTER

D8
TOP VIEW

Trigger Devices

2N4992/MBS4992 Silicon Bidirectional Switch

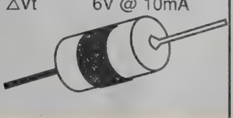




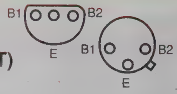
V_S	7.5-9V
I_S	120uA (max)
I_H	0.5mA (max)
V_F	1.7V (max)
I_B	10uA (max)
I_{GF}	100uA (max)

BR - 100 - 03 DIAC

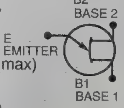
V_S	28 - 36V
$V_{SYM/VRRM}$	3V
Is (max)	100uA
△Vt	6V @ 10mA



2N2646 Unijunction Transistor (UJT)

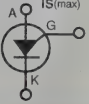

B1
B2
E
B1
B2
E

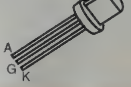
P_{TOT}	300mW
$V_{B2.E}$	30V
V_{B-B1}	35V
R_{IB-BIO}	9k ohms (max)
$V_{B1\ (PK)}$	3V
$I_{E(PK)}$	5uA
n =	0.56-0.75
$I_{(VAL)}$	4mA min


B2
BASE 2
E
EMITTER
B1
BASE 1

2N6027/D13T1 Programmable Unijunction Transistor

V_{A-K}	40V (max)
I_T	2A (max)
$I_{(VAL)}$	50uA
$I_{S(max)}$	2uA @ 1.5V

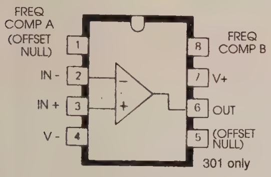




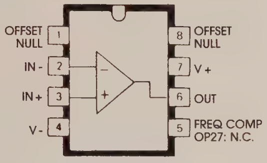
Operational Amplifiers

Type	Device	Input Offset Volt. Max (mV)	Input Offset Current Max (nA)	Input Bias Current Max (nA)	Volt. Gain Min (Volts/V)	Unity Gain B.W. Typ (MHz)	Slew Rate Av=1 Typ (V/uS)	Output Volt. Swing R1=10k (Vs=+/-15) (V)	Supply Voltage Min (V)	Supply Voltage Max (V)	CMRR Min (dB)	Differential Input Volt. (V)	Supply Current Ta=25C (Note 1) Max (mA)	Internal Freq. Comp.
	Single Op Amps													
LM301	GP Amplifier	10	70	300	15k	1	0.5	+/-12	+/-3	+/-18	70	+/-30	3	No
LM741	GP Amplifier	7.5	300	800	15k	1	0.5	+/-12	+/-3	+/-18	70	+/-30	2.8	Yes
LM308	Low Input Current	10	1.5	10	15k	1	0.3	+/-13	+/-2	+/-18	80	+/-1.0(Note 2)	0.8	No
NE5534	Low Noise	5	400	2000	15k	10	6	+/-12	+/-3	+/-22	70	+/-0.5(Note 2)	8	No
OP27	Lo Noise Precision	0.22	135	150	450k	5	1.7	+/-11	+/-4	+/-22	96	+/-0.7(Note 2)	5.7	Yes
TL071	JFET Lo Noise	13	2	7	15k	3	13	+/-12	+/-3.6	+/-18	70	+/-30	2.5	Yes
LF351	JFET Lo Noise	13	4	8	15k	4	13	+/-12	+/-4	+/-18	70	+/-30	3.4	Yes
TLC251	Prog Lo Power CMOS	10	0.3	0.6	7.5k	0.7	0.6	7.8(Vs=10V)	1.4	18	60	+/-18	0.22	Yes
CA3130	MOSFET Input	15	0.03	0.05	50k	4	10	+/-6(Vs=+/-8)	+/-2.5	+/-8	70	+/-8	15	No
CA3140	MOSFET Input	15	0.03	0.05	20k	4.5	9	+/-12	+/-2	+/-18	70	+/-8	6	Yes
LM10C	Inc. Voltage Ref.	5	3	40	15k	0.1	*	+/-14.6	1.1	45	87	+/-40	0.27	Yes
LM3080	Transconductance	5	500	5000	5.4 mmho	2@Ao1	50	+/-12	+/-2	+/-18	80	+/-5	typ 1.1	No
LM627	Precision op-amp	0.1	25	25	4M	14	4.5	+/-14.0	+/-3.5	+/-18	120	25mA(Note 2)	4.8	Yes
	Dual Op Amps													
LM1458	GP Amplifier	7.5	300	800	15k	1	0.5	+/-12	+/-3	+/-18	70	+/-30	5.6	Yes
LM358	Low Power	9	150	500	15k	1	0.5	+/-12	+/1.5	+/-16	65	32	2	Yes
LM833	Hi-Fi	5	200	1000	30k	15	7	+/-12	+/-5	+/-18	80	+/-30	8	Yes
TL072	JFET Lo Noise	13	2	7	15k	3	13	+/-12	+/-3.6	+/-18	70	+/-30	5	Yes
LF353	JFET Lo Noise	13	4	8	15k	4	13	+/-12	+/-6	+/-18	70	+/-30	6.5	Yes
LM13600	Transconductance	4	600	8000	5.4mmho	2@Ao1	50	+/-12	+/-2	+/-18	80	+/-5	typ 2.6	No
	Quad Op Amps													
LM324	GP Amplifier	9	150	500	15k	1	0.5	+/-13	+/-1.5	+/-16	65	32	3	Yes
UA4136	GP Low Noise	7.5	300	800	15k	3	1	+/-12	+/-2	+/-18	70	+/-30	11	Yes
TL074	JFET Lo Noise	13	2	7	15k	3	13	+/-12	+/-3.6	+/-18	70	+/-30	10	Yes
LF347	JFET Lo Noise	13	4	8	15k	4	13	+/-12	+/-4.5	+/-18	70	+/-30	11	Yes
LM614	Inc. Volt Ref.	7	50	250	25k	>1	0.8	12.4	+3	+36	80	36	typ 0.8	Yes
LM3900	Norton Amp	*	*	200	1.2k	2.5	20	10	+4	+32	*	*	10	Yes

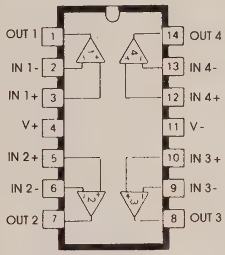
* Not Specified, Note 1: Supply current for all channels in the package, Note 2: Inputs have shunt diode protection, current must be limited, Note 3: Dick Smith Electronics may not stock all devices shown


FREQ COMP A (OFFSET NULL) 1
IN - 2
IN + 3
V - 4
8 FREQ COMP B
7 V+
6 OUT
5 (OFFSET NULL)
301 only

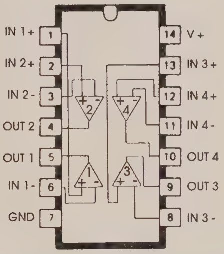
301,308


OFFSET NULL 1
IN - 2
IN + 3
V - 4
8 OFFSET NULL
7 V +
6 OUT
5 FREQ COMP OP27: N.C.

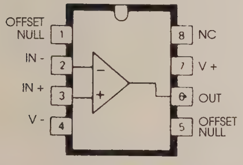
LM627, OP27


OUT 1 1
IN 1 - 2
IN 1 + 3
V + 4
IN 2 + 5
IN 2 - 6
OUT 2 7
14 OUT 4
13 IN 4 -
12 IN 4 +
11 V -
10 IN 3 +
9 IN 3 -
8 OUT 3

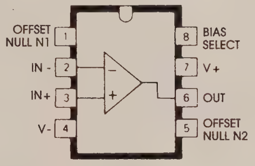
LM324, TL-074, LF347


IN 1 + 1
IN 2 + 2
IN 2 - 3
OUT 2 4
OUT 1 5
IN 1 - 6
GND 7
14 V +
13 IN 3 +
12 IN 4 +
11 IN 4 -
10 OUT 4
9 OUT 3
8 IN 3 -

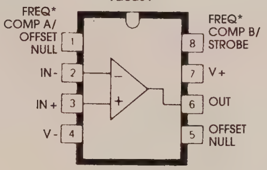
LM 3900


OFFSET NULL 1
IN - 2
IN + 3
V - 4
8 NC
7 V +
6 OUT
5 OFFSET NULL

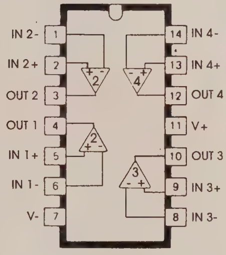
741, TL-071, LF351, AD711


OFFSET NULL N1 1
IN - 2
IN + 3
V - 4
8 BIAS SELECT
7 V +
6 OUT
5 OFFSET NULL N2

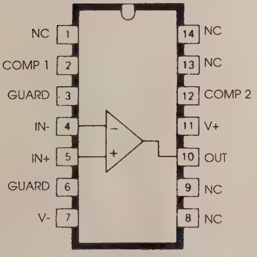
TLC251


FREQ* COMP A/ OFFSET NULL 1
IN - 2
IN + 3
V - 4
8 FREQ* COMP B/ STROBE
7 V +
6 OUT
5 OFFSET NULL

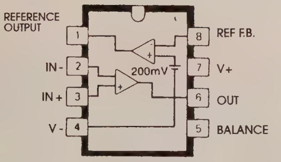
CA-3130, CA-3140
*CA-3130 ONLY


IN 2 - 1
IN 2 + 2
OUT 2 3
OUT 1 4
IN 1 + 5
IN 1 - 6
V- 7
14 IN 4 -
13 IN 4+
12 OUT 4
11 V+
10 OUT 3
9 IN 3+
8 IN 3-

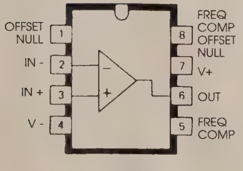
UA4136


NC 1
COMP 1 2
GUARD 3
IN- 4
IN+ 5
GUARD 6
V- 7
14 NC
13 NC
12 COMP 2
11 V+
10 OUT
9 NC
8 NC

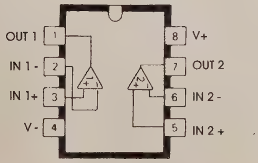
308


REFERENCE OUTPUT 1
IN - 2
IN + 3
V - 4
8 REF F.B.
7 V +
6 OUT
5 BALANCE
200mV

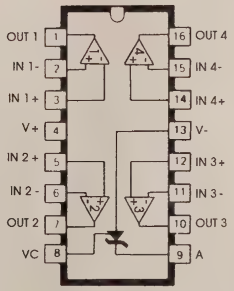
LM-10


OFFSET NULL 1
IN - 2
IN + 3
V - 4
8 FREQ COMP OFFSET NULL
7 V+
6 OUT
5 FREQ COMP

NE5534

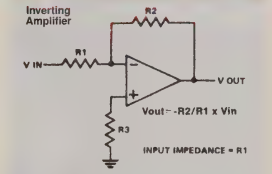

OUT 1 1
IN 1 - 2
IN 1+ 3
V - 4
8 V+
7 OUT 2
6 IN 2 -
5 IN 2 +

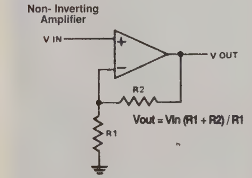
TL-072, LF-353, LM-833,
1458, AD712,LM358

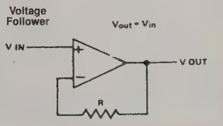

OUT 1 1
IN 1 - 2
IN 1 + 3
V+ 4
IN 2 + 5
IN 2 - 6
OUT 2 7
VC 8
16 OUT 4
15 IN 4 -
14 IN 4 +
13 V-
12 IN 3 +
11 IN 3 -
10 OUT 3
9 A

LM 614

Amplifier Configurations


Inverting Amplifier
R2
R1
V IN
V OUT
Vout = -R2/R1 x Vin
R3
INPUT IMPEDANCE = R1


Non- Inverting Amplifier
V IN
V OUT
R2
Vout = Vin (R1 + R2) / R1
R1


Voltage Follower
Vout = Vin
V IN
V OUT
R

Voltage Regulators

Three Terminal Voltage Regulators

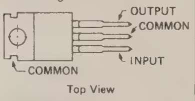
These voltage regulators almost make power supply building unnecessary since they require only a filtered DC voltage input. They are essentially indestructible (if used within manufacturer's specs) because of internal current limiting and thermal shutdown should a short occur. They are ideally suited to local, on-board regulation simplifying power supply distribution systems. Excellent for TTL and project supplies. With the advent of microprocessors and microcomputers, these regulators have been used extensively in power supplies for such systems. This type of use typifies their versatility and reliability. Another area of supply regulation use is with analogue operational amplifiers. These circuits usually call for both + and – complementary rail voltages. These three terminal devices ideally suit such requirements.

The addition of protection diodes, as shown in the 317/350 application circuit, is recommended if there is any possibility of the regulator input or output being shorted to ground. These may also be necessary if significant (1uF) capacitance is connected between ground and either the common or output terminals of the regulator.

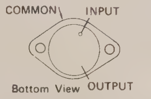
Type	Pol	Case	Vin Max	Vout min	Vout typ.	Vout max	Iout (nom) A.	Drop-out Volt.
78L05Z	pos.	TO-92	30	4.8	5	5.2	0.1	2.2
78L12Z	pos.	TO-92	30	11.5	12	12.5	0.1	2.2
78L15Z	pos.	TO-92	35	14.4	15	15.6	0.1	2.2
7805T	pos.	TO-220	35	4.8	5	5.2	1	2.5
7808T	pos.	TO-220	35	7.7	8	8.3	1	2.5
7812T	pos.	TO-220	35	11.5	12	12.5	1	2.5
7815T	pos.	TO-220	35	14.4	15	15.6	1	2.5
7805K	pos.	TO-3	35	4.8	5	5.2	1	2
7812K	pos.	TO-3	35	11.5	12	12.5	1	2
7815K	pos.	TO-3	35	14.4	15	15.6	1	2
7905T	neg.	TO-220	35	-4.8	-5	-5.2	1	2.3
7912T	neg.	TO-220	35	-11.5	-12	-12.5	1	2.3
7915T	neg.	TO-220	35	-14.4	-15	-15.6	1	2.3
7905K	neg.	TO-3	35	-4.8	-5	-5.2	1	2.3
LM317T	pos.	TO-220	40	adj. 1.2 to 37			1.5	3
LM317K	pos.	TO-3	40	adj. 1.2 to 37			1.5	3
LM350T	pos.	TO-220	35	adj. 1.2 to 33			3	3
LM350K	pos.	TO-3	35	adj. 1.2 to 33			3	3
LM337T	neg.	TO-220	40	adj. -1.2 to -37			1.5	3
LM-2940CT-5	pos.	TO-220	26	<6.25	5	5.25	1	<1
LM-2940T-8	pos.	TO-220	26	<9.4	8	8.4	1	<1
LM-2940T-10	pos.	TO-220	26	<11.5	10	10.5	1	<1
LM-2940CT-12	pos.	TO-220	26	<13.6	12	12.6	1	<1
LM-2941CT	pos.	TO-220	45	adj. 5 to 20			1	<1

For all devices listed, the maximum junction temperature is 125°C. Except for TO-92 packages, maximum junction to case thermal resistance is 4°/watt. For TO-92 packages, junction to ambient thermal resistance is 230°/w.

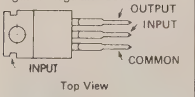
TO-220 Package
78XX, LM340, LM2940
Positive Regulator Series


OUTPUT
COMMON
INPUT
COMMON
Top View

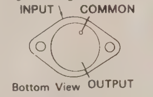
TO-3 Package
78XX, LM340
Positive Regulator Series


COMMON
INPUT
Bottom View
OUTPUT

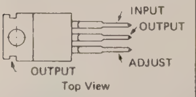
TO-220 Package 79XX, LM320
Negative Regulator Series


OUTPUT
INPUT
COMMON
INPUT
Top View

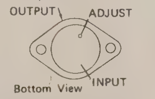
TO-3 Package 7905, LM320
Negative Regulator Series


INPUT
COMMON
Bottom View
OUTPUT

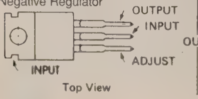
TO-220 Package LM317, LM350
Positive Regulator


INPUT
OUTPUT
ADJUST
OUTPUT
Top View

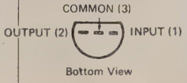
TO-3 Package
LM317, LM350


OUTPUT
ADJUST
Bottom View
INPUT

TO-220 Package LM337
Negative Regulator


OUTPUT
INPUT
ADJUST
INPUT
Top View

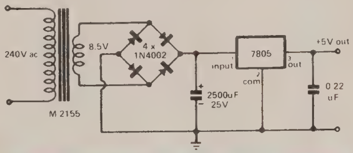
TO-92 Package 78LXX
Positive Regulator Series


COMMON (3)
OUTPUT (2)
INPUT (1)
Bottom View

Typical Power Supply

Output: 5V @ 1A

The same basic circuit can be used with other regulators of different voltages, only the input ac voltage has to be changed to accommodate the requirement of the regulator, e.g. If an output of 12V was the requirement, a 7812 IC could be used with an ac input voltage of 15V.

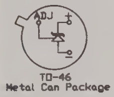

240V ac
M 2155
8.5V
4 x
1N4002
input
7805
out
com
2500uF
25V
+5V out
0 22
uF

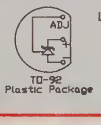
LM335 Precision Temperature Sensor

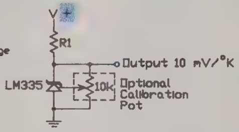
The LM335 operates as a two terminal zener having a breakdown voltage directly proportional to absolute temperature (10mV per degree Kelvin).

An adjustment terminal is provided, and maximum accuracy is realised when this is used to set the output voltage to 2.982V @ 25°C.

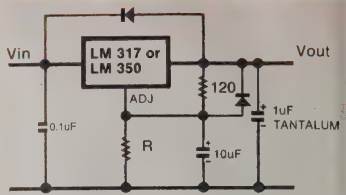
Max. Rev. Current	15mA
Continuous operating temp.	-40°C to 100°C
Operating output Voltage (Tc = 25°C, I = 1mA) typ	2.98V
Max. Uncalibrated Temp. error (Tc = 25°C, I = 1mA)	6°C
Output Voltage Tempco.	10mV/°C
Dynamic Impedance	0.6 Ohms
Non-Linearity (I = 1mA)	1.5°C


ADJ
+
–
TO-46
Metal Can Package


ADJ
+
–
TO-92
Plastic Package


V+
R1
Output 10 mV/°K
LM335
10k
Optional
Calibration
Pot

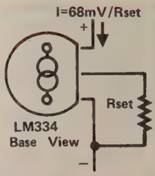
LM317 or LM350 Series


Vin
LM 317 or
LM 350
Vout
ADJ
120
0.1uF
R
10uF
1uF
TANTALUM

1. Choose Resistor R as follows:
   R = (96 x Vout) - 120
   Where R is in ohms and Vout is in volts.
2. Vin should be at least 2.5 volts greater than Vout.
3. Capacitor voltage ratings must be chosen appropriately.
4. The protection diodes shown will be necessary if the input or output of the regulator is shorted to ground. 1 amp types should be adequate.

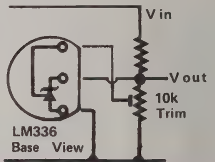
LM334 Adjustable Current Source

Operating Voltage	1-30
Max Power Dissipation	200mW
Voltage Sensitivity	0.1%/V
Temperature Sensitivity	+0.33%/°C


I=68mV/Rset
+
Rset
LM334
Base View
–

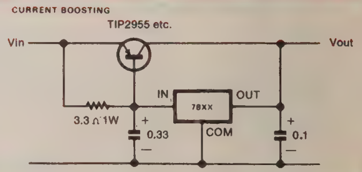
LM336 Reference Diodes

	LM336-2.5	LM336-5.0
Max Fwd Current (mA)	10	10
Untrimmed Ref Voltage	2.44-2.54	4.9-5.1
Dynamic Impedance (ohms)	1	2
Temp Stability (0-70°C)	20ppm	20ppm


Vin
Vout
10k
Trim
LM336
Base View

Increasing the Output Current of the Regulator

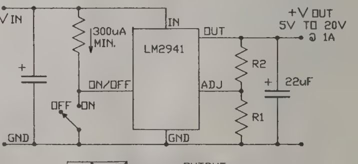
By adding a PNP power transistor to a positive regulator, the output current can be increased above the normal rating of the regulator itself. The circuit shown below can be expected to deliver in excess of 4A with the pass transistor mounted on a heatsink. The same conditions can also be implemented with a negative regulator, the difference being the polarities of components, the pass transistor in this case would be an NPN type such as a 2N3055.

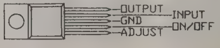

CURRENT BOOSTING
TIP2955 etc.
Vin
Vout
IN
78XX
OUT
3.3 Ω 1W
+
0.33
–
COM
+
0.1
–

LM2941 Variable Low Drop-out Regulator

Here is the basic application circuit for the LM2941 Variable Low Dropout Voltage Regulator:

1. If the on/off switch is not required, then the pull-up resistor can be omitted and the ON/OFF pin is tied to ground.
2. If the on/off switch is used, then a minimum of 300uA should flow in the pull-up resistor when the switch is open. To establish this resistor value assume 2V at the ON/OFF pin.
3. The capacitor on the output must not be less than 22uF, and positioned as close to the LM2941 as possible.
4. A 1K resistor is recommended for R1. Do not bypass R1 or R2. The reference voltage (V_{REF}), between the ADJUST pin and ground, is typically 1.275V
5. The equation for VOUT is;
   $V_{OUT} = V_{REF} * (R1 + R2)/R1$
   which for R2 is; $R2 = R1 * (V_{OUT}/V_{REF} -1)$


+V IN
300uA
MIN.
IN
OUT
LM2941
+V OUT
5V TO 20V
@ 1A
+
ON/OFF
ADJ
R2
+
22uF
OFF
ON
R1
GND
GND


OUTPUT
GND
ADJUST
INPUT
ON/OFF

LM2941 (TOP VIEW)

555 TIMER (LM/NE555 Bipolar, TLC555 CMOS)

General

The 555 Timer is a highly versatile low-cost IC specifically designed for precision timing applications. It can also be used in monostable multi-vibrator, astable multi-vibrator and Schmitt trigger applications.

Bipolar 555

The 555 has many attractive features. It can operate from 4.5V to 16V. Its output can source (supply) or sink (absorb) load current up to a maximum of 200mA and so can directly drive loads such as relays, LEDs, low-power lamps, and high impedance speakers. When used in the 'timing' mode, the IC can readily produce accurately timing periods variable from a few microseconds to several hundred seconds via a single R-C network. Timing periods are virtually independent of supply rail voltage, have a temperature coefficient of only .005% per ˚C, can be started via a TRIGGER command signal, and can be aborted by a RESET command signal.

When used in the monostable mode, the IC produces output pulses with typical rise and fall times of a mere nS.

When used in the astable mode both the frequency and the duty cycle of the waveform can be accurately controlled with two external resistors and one capacitor.

CMOS 555

Due to its high impedance inputs (typically 1012Ω), it is capable of producing accurate time delays and oscillations while using less expensive, smaller timing capacitors than NE555. Like the NE555, the TLC555 achieves both monostable (using one resistor and one capacitor) and astable (using two resistors and one capacitor) operation. In addition, 50% duty cycle astable operation is possible using only a single resistor and one capacitor. The TLC555 will operate at frequencies up to 2MHz and is fully compatible with CMOS, TTL, and MOS logic.

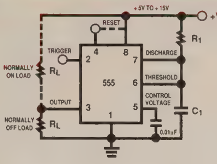
While the complementary CMOS output is capable of sinking over 100mA and sourcing over 10mA, the TLC555 exhibits greatly reduced supply current spikes during output transitions. This minimises the need for the large decoupling capacitors required by the NE555.

Specifications

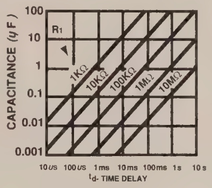
Vcc = 15V unless otherwise stated		LM/NE555C				TLC555C		
TA = 25˚C			Limits				Limits	
Parameters	Conditions	Min	Typ	Max	Conditions	Min	Typ	Max
Supply Voltage		4.5		16V		2		18
Supply Current	(RL = ∞, Vop = low)		10mA	15mA	(RL=∞, Vop=low)		360uA	
Power Dissipation				600mW				
600mW								
Threshold Voltage	(% of Vcc)		67%		(%of Vcc)		67%	
Threshold Current			0.1	0.25uA	(Vcc=5V)		10pA	
Trigger Voltage	(% of Vcc)		33%		(% of Vcc)		33%	
Trigger Current			0.5uA		(Vcc=5V)		10pA	
Reset Voltage		0.4	0.5	1V		0.4	1.1	1.5
Reset Current			0.1	0.4mA	(Vcc=5V)		10pA	
High Level Output	(Iol=100mA)	12.75	13.3V		(Iol=10mA)	12.5V	14.2V	
Low Level Output	(Iol=100mA)		2	2.5V	(Iol=100mA)		1.28V	3.2V
Output Current	Sink			200mA			100mA	
	Source			200mA			10mA	
Initial Error of Timing Interval			1%				1%	

Function Table

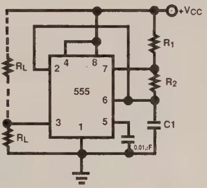
Reset	Trigger Voltage	Threshold Voltage	Output	Discharge Switch
Low	Irrelevant	Irrelevant	Low	On
High	<1/3 Vcc	Irrelevant	High	Off
High	>1/3 Vcc	>2/3 Vcc	Low	On
High	>1/3 Vcc	<2/3 Vcc	As previously established	


+5V TO +15V
+Vcc
RESET
4
8
R1
TRIGGER
2
7
DISCHARGE
NORMALLY ON LOAD
RL
555
6
THRESHOLD
OUTPUT
3
5
CONTROL VOLTAGE
C1
NORMALLY OFF LOAD
RL
1
0.01µF

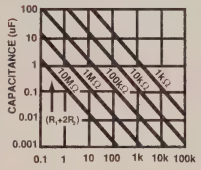
Basic Monostable Circuit



Time Delay vs R1 and C1


+Vcc
R1
RL
2
4
8
7
555
R2
6
3
1
5
C1
RL
0.01µF

Basic Astable Circuit



Free Running Frequency

Monostable Operation

In the monostable mode, the timer functions as a one-shot. Referring to circuit the external capacitor is initially held discharged by a transistor inside the timer.

When a negative trigger pulse is applied to lead 2, the flip-flop is set, releasing the short circuit across the external capacitor and drives the output HIGH. The voltage across the capacitor, increases exponentially with the time constant t=R1C1. When the voltage across the capacitor equals 2/3 VCC, the comparator resets the flip-flop which then discharges the capacitor rapidly and drives the output to its LOW state.

The circuit triggers on a negative-going input signal when the level reaches 1/3 VCC. Once triggered, the circuit remains in this state until the set time has elapsed, even if it is triggered again during this interval. The duration of the output HIGH state is given by t=1.1 R1C1. The timing interval is independent of supply. When Reset is not used it should be tied high to avoid any possibility of false triggering.

Astable Operation

When the circuit is connected as shown it triggers itself and free runs as a multivibrator. The external capacitor charges through R1 and R2 and discharges through R2 only. Thus the duty cycle may be precisely set by the ratio of these two resistors.

In the astable mode of operation, C1 charges and discharges between 1/3 VCC and 2/3 VCC. As in the triggered mode, the charge and discharge times and therefore frequency are independent of the supply voltage.

The charge time (output HIGH) is given by:

$$t1 = 0.693\ (R1 + R2)\ C1$$

and the discharge time (output LOW) by:

$$t2 = 0.693\ (R2)\ C1$$

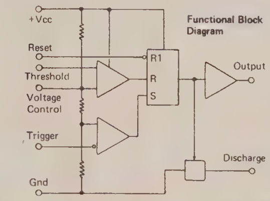
Thus the total period T is given by:

$$T = t1 + t2 = 0.693\ (R1 + 2R2)\ C1$$

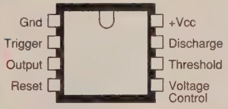
The frequency of oscillation is then:

$$f = \frac{1}{T} = \frac{1.44}{(R1 + 2R2)\ C1}$$

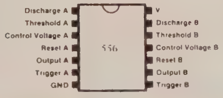
The duty cycle is given by: $D = \frac{R2}{R1 + 2R2}$


+Vcc
Reset
Threshold
Voltage Control
Trigger
Gnd
R1
R
S
Output
Discharge

Functional Block Diagram


Gnd
Trigger
Output
Reset
+Vcc
Discharge
Threshold
Voltage Control

555 Pin Connections


Discharge A
Threshold A
Control Voltage A
Reset A
Output A
Trigger A
GND
556
V
Discharge B
Threshold B
Control Voltage B
Reset B
Output B
Trigger B

556 Pin Connections

723 Voltage Regulator

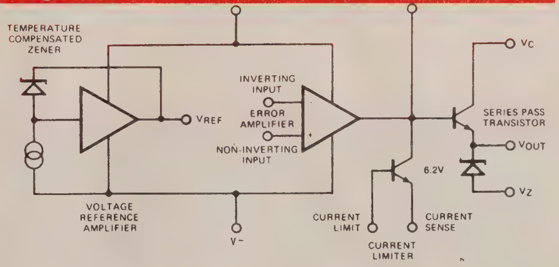
The 723 voltage regulator is a versatile device which is intended for use with positive or negative supplies, as either a series, shunt or switching regulator. It includes a temperature compensated voltage reference, error amplifier, series pass transistor and current limit circuitry

Output voltage is adjustable between 2 and 37 volts, and the internal transistor can supply up to 150mA. Output current capability can be increased to several amps with an external pass transistor.

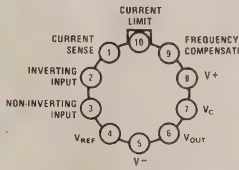
Specifications

Absolute Maximum Ratings		
Input Voltage		40V
Diff. Input Voltage (error amp)		+/-5V
Com. Mode Input Voltage (error amp)		8V
Current from ref		15mA
Current from Vz		25mA
Maximum Output Current		150mA
Maximum Dissipation 25°C:	Dip	660mW
	Metal Can	800mW

Characteristics				
Input Voltage Range	9.5	–	40	V
Output Voltage Range	2	–	37	V
Reference Voltage	6.8	7.15	7.5	V
Standby Current Drain	–	2.3	4	mA
Current Limit Sense Voltage	–	0.65	–	V
Thermal Resistance J-A: Dip	–	105	–	K/W
Metal Can	–	165	–	K/W


TEMPERATURE COMPENSATED ZENER
VREF
VOLTAGE REFERENCE AMPLIFIER
INVERTING INPUT
ERROR AMPLIFIER
NON-INVERTING INPUT
V−
VC
SERIES PASS TRANSISTOR
VOUT
6.2V
VZ
CURRENT LIMIT
CURRENT SENSE
CURRENT LIMITER

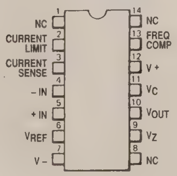
Metal Can Package


CURRENT LIMIT
10
CURRENT SENSE
1
FREQUENCY COMPENSATION
9
INVERTING INPUT
2
V+
8
NON-INVERTING INPUT
3
VC
7
VREF
4
5
V−
6
VOUT

Note: Pin 5 connected to case.

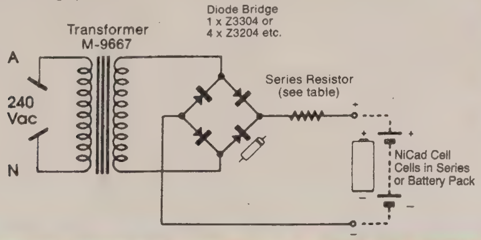
Top View

Dip Package


1
NC
2
CURRENT LIMIT
3
CURRENT SENSE
4
– IN
5
+ IN
6
VREF
7
V−
14
NC
13
FREQ COMP
12
V+
11
VC
10
VOUT
9
VZ
8
NC

A Simple NiCad Charger

Circuit diagram for a simple constant current charger, the table below gives a guide to the value of the series resistor. The actual value of the correct charging current for the nicad cell is usually marked on the body. The resistor values in the table chosen are for a 14 hour charge period.


Diode Bridge
1 x Z3304 or
4 x Z3204 etc.
Transformer
M-9667
A
240
Vac
N
Series Resistor
(see table)
+
-
NiCad Cell
Cells in Series
or Battery Pack

Typical Applications

			4 Cells	6 Cells	8 Cells	10 Cells
Type of Cell		5V	7.5V	10V	12.5V	
S-3305	500mAH	AA	220/1W	150/1W	120/1W	100/1W
S-3312	600mAH	AA	150/1W	120/1W	100/1W	68/1W
S-3301	1.2AH	C	82/5W	68/5W	47/5W	33/5W
S-3311	2AH	C	47/5W	39/5W	27/5W	22/5W
S-3303	1.2AH	D	82/5W	68/5W	57/5W	33/5W
S-3310	4AH	D	22/10W	18/5W	12/5W	10/5W

The figures in the four columns indicate the value of the series resistor (in ohms), and its power rating (in watts) for the particular cells. These values are intended as a guide, or starting point, but should result in charge current within 10% of the desired target values. The actual value best suited to the cells in use can be determined by inserting a current meter in series with charged cells, while charging, and substituting other resistor values. For most applications, the values shown in the table should be satisfactory.

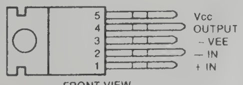
LM1875 20-Watt Amplifier IC

The LM1875 is a monolithic power amplifier IC which takes advantage of advanced techniques to achieve low distortion, even at high output levels. Other features include high gain, fast slew rate and a wide power bandwidth, large output voltage swing, high current capability and wide supply range. The device is internally compensated for gains of 10 and greater.

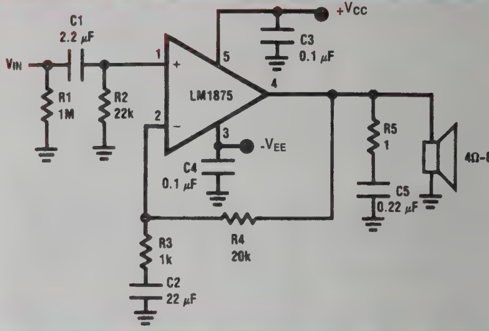
Specifications

Supply Voltage	+/-30V max.
Supply Current	100mA max.
THD 20W/1KHz	0.015% typ.
Open Loop Gain	90dB typ.
Current Limit	4A typ.
Thermal Resistance (junction to case)	2°C/W typ.
Junction Temperature	150°C max.

TO-220 Power Package (T)


5
4
3
2
1
Vcc
OUTPUT
– VEE
– IN
+ IN

FRONT VIEW

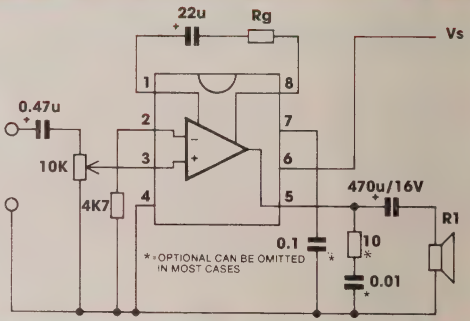

C1
2.2 μF
VIN
R1
1M
R2
22k
1
2
+
–
LM1875
5
4
3
+Vcc
C3
0.1 μF
-VEE
C4
0.1 μF
R5
1
C5
0.22 μF
4Ω-8Ω
R4
20k
R3
1k
C2
22 μF

LM386 Power Amplifier

The LM386 power amplifier IC is ideal for low voltage applications. The gain is internally set at 20, but may be increased up to 200 by adding components between pins 1 and 8.

Gain	Rg
20	∞
50	680
100	180
200	0

Output Power (mW)			
Vs (Volts)	Rl (ohms) 4	8	16
12	380	660	780
9	380	560	400
6	250	250	150
5	190	160	90


22u
Rg
Vs
1
8
2
7
3
6
4
5
0.47u
10K
4K7
470u/16V
Rl
0.1
10
0.01
*=OPTIONAL CAN BE OMITTED IN MOST CASES

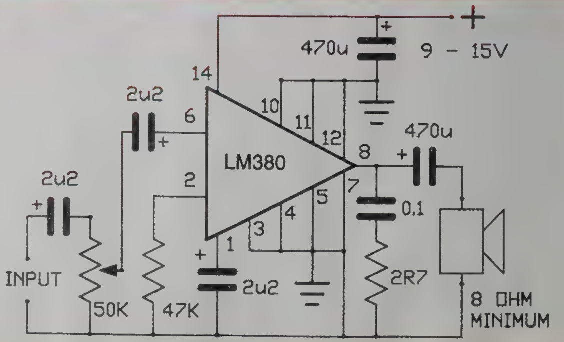
LM380 2.5-Watt Amplifier IC

The LM380 is an amplifier IC for general purpose audio applications such as intercoms, small audio amplifiers, headphone amplifiers, TV and radio sound. The output is short-circuit proof and the device has internal thermal limiting. It is also suitable for low power DC operation such as for controlling a small motor or servo control.

The gain is internally set at 34dB, a voltage gain of 50.

Specifications

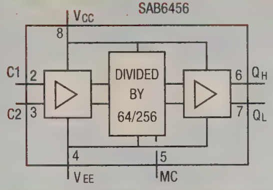
Supply Voltage	10-22 Volts
Gain	34dB
Output Power (into 8 ohms, @ 3% THD)	2.5 Watt (min.)
Peak Current	1.3 Amps
Input Resistance	150k ohms
Bandwidth	100kHz
THD	<0.2%
Quiescent Current	7mA typ.


+
9 – 15V
470u
14
2u2
6
10
11
12
LM380
8
470u
2
7
5
4
3
1
0.1
2u2
INPUT
50K
47K
2u2
2R7
8 OHM
MINIMUM

Z-9125 SAB6456 1GHz Prescaler IC

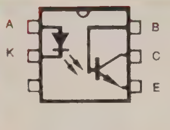
Specifications

Supply Voltage	4.5-5.5 Volts
Current Consumption	21mA (typ)
Max. Input Signal	300mV rms min
Input Sensitivity	10mV rms max
Input Frequency Range	70-1000MHz
Output Voltage	1 Volt (p-p)
Divide ratio	64 with MC pin open circuit 256 with MC pin connected to ground

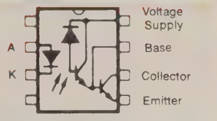

SAB6456
Vcc
8
C1
2
C2
3
DIVIDED BY 64/256
6
QH
7
QL
4
VEE
5
MC

Opto Couplers

	LED			Transistor						Device			
TYPE	Vr (V)	If (mA)	Vf@ V	If (mA)	Vce (V)	Vcb (V)	Vces @ (V)	Ic (mA)	Hfe	Ic/If	Viso (kV)	Ptot (mW)	CASE
H11A1	3	60	1.15	10	30	70	0.1	0.5	500	2.5	7.5	250	D6
4N25	3	80	1.5	10	30	70	0.5	2	325	0.5	2.5	250	D6
4N28	3	80	1.5	10	30	–	0.5	2	325	0.2	0.5	250	D6
SFH601	6	60	1.6	60	70	–	0.4	2.5	–	>0.4	5.3	250	D6
6N138	5	20	1.7	1.6	7	–	0.06	6.4	–	>3	3	135	D8



D6


Voltage Supply
Base
Collector
Emitter
A
K

D8

Z-4516 3021 Opto-Coupled TRIAC Driver

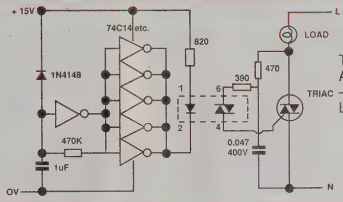
This opto-coupled triac driver consists of a gallium-arsenide infrared LED optically coupled to a silicon bilateral switch (SBS) in a 6 pin DIL pack. They are designed for general applications requiring isolated triac triggering such as interfacing TTL to mains control equipment. The device features low trigger current, high isolation and blocking voltages, and low cost.

Specifications:

Package Dissipation	330mW
Surge Isolation Voltage	7500V
SBS Dissipation	300mW
SBS Blocking Voltage (Pk)	400V
SBS dv/dt	10V/uS (typ.)

Specifications:

SBS Current (Pk)	100mA
SBS On Voltagem(max)	3V
LED Trigger Current (max)	15mA
LED Fsw Voltage (max)	1.5V
LED Current (max)	50mA


+15V
74C14 etc.
820
1N4148
470K
1uF
OV
L
LOAD
470
390
1
6
2
4
TRIAC
0.047
400V
N

Typical Application – Flashing Light

CMOS DTMF Encoder

Z-5087 TCM5807

Supply Voltage
3.5 – 10V

Unloaded Supply Current
Standby
200uA max. Vdd=10V
Operating
10mA max. Vdd=10V

Power Dissipation
1.15W max

DTMF Ouput Pin 16
(emitter follower output)
Loading; Vdd<5V
620 ohms min.
Vdd>5V
330 ohms min.

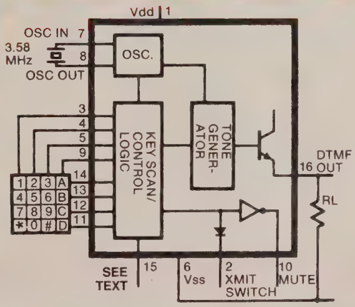
RMS Signal Output, Pin 16
High Tones 396– 630mV
Low Tones 317 – 504mV

Frequency Error
0.73% max.

Transmit, Pin 2
Emitter follower. High when no keyboard input, low when DTMF active.

Mute, Pin 10
CMOS gate output. Low when no keyboard input and high when DTMF active.

Single Tone Inhibit, Pin 15
Has an internal pull-up. Connect to Vss to inhibit single tones.


Vdd
1
OSC IN
7
3.58 MHz
8
OSC OUT
OSC.
3
4
5
9
14
13
12
11
1 2 3 A
4 5 6 B
7 8 9 C
* 0 # D
KEY SCAN/ CONTROL LOGIC
TONE GENER-ATOR
DTMF
16 OUT
RL
SEE TEXT
15
6
Vss
2
XMIT SWITCH
10
MUTE

Z-5088 HM-9187

Supply Voltage
2 – 5.5V

Unloaded Supply Current
Standby
20uA max. Vdd=2.5V
Operating
2mA max. Vdd=2.5V

Power Dissipation
500mW max

DTMF Ouput Pin 16
(emitter follower output)
Loading; 1 Kohms min.

RMS Signal Output, Pin 15
High Tones 168–311mV
Low Tones 150–220mV

Frequency Error
0.73% max.

Transmit, Pin 2
Open Drain output. High when no keyboard input, low when DTMF active.

Mute, Pin 10
CMOS gate output. Low when no keyboard input and high when DTMF active.

Unbuffered DTMF Output, Pin 15
Loading: 10 kohms. min. for Dist <= -23dB

145436 DTMF Encoder

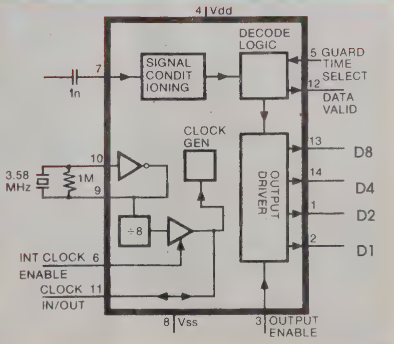
Specifications

Supply Voltage		Vdd	4.5-5V
Supply Current		Idd	15mA (max)
Input Impedance		Rin	90k ohms (min)
Input Signal Level			14mV-615mV
Detection Bandwidth			5% (typ)
Output Current		Ioh	800uA
(Data/Data Valid Pins)		Iol	1mA
Tone On Time (for detection)			40mS (min)
Tone Off Time (for detection)			40mS (min)
Detection Time	(Pin5=Vss)		22-40ms
	(Pin5=Vdd)		32-50ms
Release Time	(Pin5=Vss)		28-40ms
	(Pin5=Vdd)		18-30ms

Notes:
1. **Guard time** selects detect and release times.
2. **Data valid** output signals a valid detection.

OUTPUT CODES

Digit	D8	D4	D2	D1
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
0	1	0	1	0
*	1	0	1	1
#	1	1	0	0
A	1	1	0	1
B	1	1	1	0
C	1	1	1	1
D	0	0	0	0


4
Vdd
DECODE LOGIC
7
In
SIGNAL CONDIT IONING
5
GUARD TIME SELECT
12
DATA VALID
CLOCK GEN
13
D8
14
D4
1
D2
2
D1
10
3.58 MHz
1M
9
÷8
OUTPUT DRIVER
INT CLOCK 6
ENABLE
CLOCK 11
IN/OUT
8
Vss
3
OUTPUT ENABLE

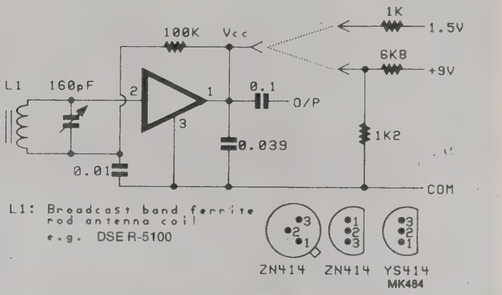
Z-6525 TRF Radio IC

This device is a 10-transistor TRF circuit containing an RF amplifier, active detector and AGC housed in a space saving 3- pin package. The circuit features high quality audio, low current consumption, no alignment and complete stability.

A typical application is shown with two alternative power source possibilities.

Specifications

Supply Voltage	1.1 to 1.8V
Supply Current	0.3 to 0.5mA
Frequency Range	0.15 to 3MHz
Input Resistance	4M ohms
THD	4%
Power Gain	72dB
AF Output (Vin=10mV m=30%)	30mV RMS

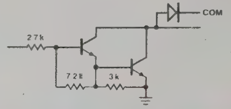

1K
1.5V
100K
Vcc
6K8
+9V
L1
160pF
2
1
3
0.1
O/P
0.039
1K2
0.01
COM
L1: Broadcast band ferrite rod antenna coil
e.g. DSE R-5100
3
2
1
ZN414
ZN414
YS414
MK484

Darlington Driver IC

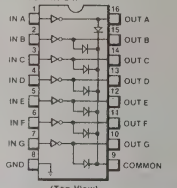
These devices comprise either seven or eight Darlington connected transistors in a common emitter, open collector arrangement. Each Darlington pair is provided with a clamping diode, and series input resistor to allow operation directly from TTL/CMOS operating at 5 volts. Typical applications include display, solenoid and relay drivers.

Specifications

Device	**Z-5380 (2003)**	**Z-6282 (2803)**
Number of drivers in package	7	8
Number of pins	16	18
Collector Emitter Voltage (max)	50V	50V
Collector Current (max)	350mA	500mA
Vce (sat) (Ic = 350mA, Ib = 0.5mA)	1.6V	1.6V
Input Voltage (Vce = 2V, Ic = 350mA)	3.0V	3.0V
Clamp Diode Vf (If = 350mA)	2.0V	2.0V
Max. Power Dissipation (25°C)	1.8W	1.8W
Representative Devices	ULN2003 DS2003 uA9667	ULN2803


COM
27k
7.2k
3k

Connection Diagram
16-Pin DIP

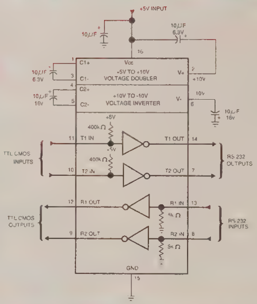

IN A
IN B
IN C
IN D
IN E
IN F
IN G
GND
OUT A
OUT B
OUT C
OUT D
OUT E
OUT F
OUT G
COMMON
1
2
3
4
5
6
7
8
16
15
14
13
12
11
10
9

(Top View)

Z-5369 CMOS Single-Rail RS-232 Interface

The Z-5369 provides 2 RS-232 inputs and 2 outputs. The device features on-chip dc-dc converters to generate the bipolar RS-232 supplies from a single 5 volt rail.

Specifications		
Supply Voltage	Vdd	4.5 to 5.5V
Supply Current	idd	5mA (typ)
Driver Input Voltage	Vil Vih	0.8V (max) 2V (min)
Driver Input Current	Iil	-200uA (max)
Driver Output Swing	Voh Vol	5V (min @ R1=3K) -5V (min @ R1=3K)
Driver Output Resistance	Ro	300 ohms (min)
Output Short Circuit Current	Isc	10mA (typ)
Receiver Input Threshold	Vih Vil	1.7V (typ) 1.2V (typ)
Receiver Input Resistance	Rin	3K to 5K
Recommended dc-dc Capacitors		1 to 47 uF


+5V INPUT
10µF
10µF 6.3V
16
Vcc
C1+
C1-
+5V TO +10V VOLTAGE DOUBLER
V+
+10V
10µF 6.3V
1
3
2
4
5
6
C2+
C2-
+10V TO -10V VOLTAGE INVERTER
V-
10V
10µF 16V
10µF 16V
+5V
400kΩ
11
T1 IN
T1 OUT
14
10
T2 IN
T2 OUT
7
TTL CMOS INPUTS
RS 232 OUTPUTS
12
R1 OUT
R1 IN
13
5kΩ
9
R2 OUT
R2 IN
8
TTL CMOS OUTPUTS
RS 232 INPUTS
GND
15

Using Power MOSFETS

MOSFETs have undergone considerable development in the last decade and offer several advantages over common bipolar transistors, particularly in switching applications.

The most common power MOSFETs are N-channel enhancement mode devices. These are not unlike NPN bipolar transistors in that the Source is usually the most negative terminal and the Drain is the most positive. No current flows through the Drain-Source channel when there is zero volts between the Gate and Source but the channel conducts when a high enough positive voltage, typically 2 to 4 volts, is applied between the Gate and the Source. At higher Gate to Source voltages of around 10 volts the Drain-Source channel is fully conducting and is equivalent to a very low value resistor – typically 0.1 ohms.

Although MOSFETs are fairly rugged, the Gate is very susceptible to electrostatic damage and normal antistatic techniques should be used when handling and installing MOSFETs.

In the circuits below, figure 1 shows a car interior light extender. When one of the car doors is opened, its door switch closes and draws base current through Q1. Q1 conducts, charging C1 and provides sufficient gate voltage for Q2 to switch on. When the door switch opens, Q1 is turned off and C1 discharges via the 1M resistor. After about 10 seconds the voltage on C1 falls below the FET's Gate threshold voltage and Q2 switches off. As the MOSFET switches off slowly, it dissipates several watts of heat for a short period but should not need a heatsink for normal, infrequent switching.

A novel reverse-polarity protection circuit is shown in figure 2. If the supply is connected correctly, the FET's inherent Drain-Source diode conducts, allowing almost the full supply voltage to appear across the load. The gate is now biased on, causing the Drain-Source channel to fully conduct and short-circuit the diode. If the supply is reversed the diode will not conduct and the FET, having no Gate bias, will block current flow. The major advantage of this circuit over a simple series diode is the much lower voltage drop lost across the FET.

Figure 3 shows a high efficiency dimmer for 12V filament lamps. The 555 timer IC is configured as a variable duty cycle, astable oscillator running at around 300Hz. No heatsink should be necessary for loads of up to 40W and only a small heatsink (30 degrees C/W) is needed for 60W loads.

FIGURE (1)

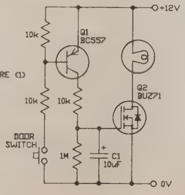
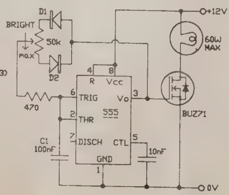

+12V
10k
Q1
BC557
10k
10k
Q2
BUZ71
DOOR SWITCH
1M
C1
10uF
0V

FIGURE (3)


D1
BRIGHT
50k
max
D2
+12V
60W MAX
4
8
R
Vcc
6
TRIG
Vo
3
470
2
THR
555
7
DISCH
CTL
5
C1
100nF
GND
1
10nF
BUZ71
0V

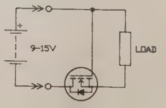
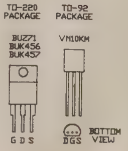


FIGURE (2)

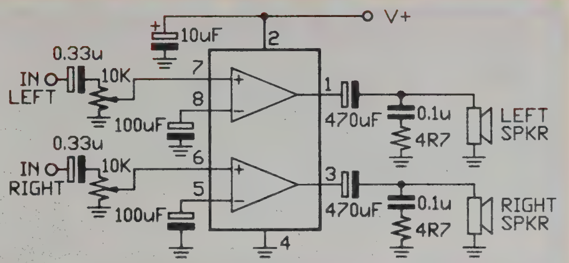

TO-220 PACKAGE
TO-92 PACKAGE
BUZ71
BUK456
BUK457
VN10KM
G D S
DGS
BOTTOM VIEW

Z-6070 TDA2822M Dual Low-Voltage Power Amplifier

The TDA2822M offers low voltage, low quiescent current operation and high power output from an 8-pin DIP package.

Specifications

Supply Voltage	1.8-15V
Quiescent Current	9mA max.
Gain	39dB typ.
Channel Balance	1dB
Input Resistance	100k ohm
Power Output (typ.)	220mW @ 6V, 16 ohms
(1kHz, 10% dist.)	380mW @ 6V, 8 ohms
	1000mW @ 9V, 8 ohms
	650mW @ 6V, 4 ohms
	110mW @ 3V, 4 ohms
Rth j-amb	100 K/W
Rth j-pin	70 K/W
Max Junction Temp.	150 °C



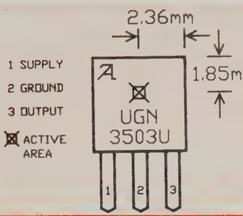
Z-2620 UGN3503 Linear Hall Sensor

Linear Hall effect sensors can be used as contactless switches, linear potentiometers, position sensors and current sensors. Unlike optical sensors, the Hall sensors are generally immune to dirt, and unlike inductive coil sensors, these devices can detect both changing and static magnetic fields.

The output voltage of the sensor in the absence of a magnetic field is nominally one half the supply voltage. A south magnetic pole presented to the branded face of the sensor will cause the output voltage to increase. A north magnetic pole will cause the output voltage to decrease.

Specifications

Operating Voltage	4.5-6V	Bandwidth (-3dB)	23kHz typ.
Supply Current	14 mA max.	Broadband Noise O/P (10Hz-10kHz)	90uV typ.
Quiescent O/P Voltage (B=0)	2.5V typ.	Output Impedance	50 ohms typ.
Sensitivity	13V/Tesla.	Operating temperature Range	-20°C to +85°C



Z-6011 uPC 1688G Wide-Band Amplifier IC

The NEC device uPC1688G is a monolithic low-noise high-gain wideband IC amplifier in a 4-pin surface mount package. This device features a flat gain over a wide bandwidth covering HF to UHF, and typical applications include mast-head and RF preamplifiers in 50 or 75 ohm systems.

ELECTRICAL CHARACTERISTICS **(Ta=25°C, Vcc=5V, Z_S=Z_L=50 ohms)**

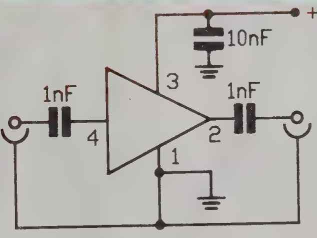
CHARACTERISTIC	SYMBOL	MIN.	AV.	MAX.	UNIT	TEST CONDITION
Circuit Current	I_{CC}	14	19	24	mA	No input signal
Power Gain	G_V	18	21	23	dB	f=0.5GHz, (G_V=S_{21})
Noise Figure	NF		4.0	5.5	dB	f=0.5GHz
Upper Limit Freq.	f_U	0.9	1.1		GHz	3dB down below 0.1GHz gain
Isolation	ISL	23	27		dB	f=0.5GHz
Input Return Loss	RLin	10	13		dB	f=0.5GHz, RLin=S_{11}
Output Return Loss	RLout	10	13		dB	f=0.5GHz, RLout=S_{22}
Maximum Output Level	P_O	2	4		dBm	f=0.5GHz, Pin=-5dBm

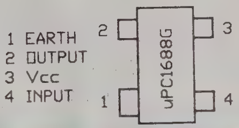
Specifications

Supply Voltage	5V
Frequency Response	1GHz typ.
Power Gain	21dB typ. @ 0.5GHz
Gain Flatness	+/- 1dB typ. 0.1 to 0.7GHz

Absolute Maximum Ratings (Ta=25°C)

Supply Voltage	6V
Input Power	+10dB
Total Power Dissipation	200mW
Operating Temp Range	-40 to +85°C





R-1797 NTC Thermistor

These Negative Temperature Coefficient (NTC) Thermistors are useful for temperature sensing, temperature compensation, automatic gain control and fluid flow monitoring. They are not for use in conducting, reducing or agressive gases or fluids.The resistance of the R-1797 can be calculated from the formula:

$$R = Ae^{B/T}$$

where, **R** is the thermistor resistance in ohms,
T is the temperature in Kelvins,
e is the natural logarithm base (2.718) and
A & B are constants which should be calculated from measurements on each particular thermistor for best accuracy.

For nominal values of B and R, A is approximately 0.0277.

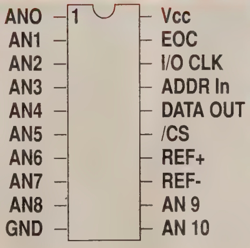
Specifications

Maximum power dissipation	0.5W
Operating temperature range	
at zero power	-25°C to 125°C
at max. power	0 to 55°C
Thermal time constant	17s approx.
Resistance Value at 25°C	100k-ohms +/-10%
B (@ 25°C & 85°C)	4500 +/-5%
Temp. Co.	-5.2% / K

Z-6830 TLC542C 11-Input Serial A-D Converter3

The Z-6830 is a serial 8-bit successive approximation analogue to digital converter. This chip is used for the A-D component of the K-2805 Parallel Port Interface Kit.

The TLC542C is operated via a 5-wire interface from a microprocessor or parallel I/O port. 11 analogue inputs (AN0-AN10) are available for use, a further analogue channel (AN11) is internally connected to half the supply rail, and can be used as a self-test or battery check. Once the 4-bit address has been received the A-D conversion is initiated. This conversion is internally clocked and completed in 20uS. The voltage reference pins Ref+ and Ref- can be connected directly to Vcc and Ground respectively, to directly suit a 0V to +5V range at the analogue inputs. The chip is addressed via the 3 input pins, /CS (chip select), IO-CLK, and ADDR IN. This operation takes 8 clock cycles; For the first 4 clock cycles, 4 address bits are written (MSB first) to ADDR IN to specify the analogue input for the next conversion. During these 8 clock cycles the 8-bit result from the previous A-D conversion is available in serial form at the DATA OUT pin (MSB first). The EOC (end of conversion) pin signals when the A-D conversion is complete.



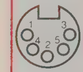
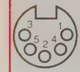
Specifications

Conversion Time	20uS typ.
Power Dissipation	10mW typ.
Unadjusted Error (for differential Vref > 4.75V)	+/-0.5 LSB max.

	Min.	Nom.	Max.
Supply Voltage	4.75	5.0	5.5V
Analogue Input Voltage	0		Vcc
Diff. Reference Voltage	1	Vcc	Vcc+0.2V
Clock frequency	0	1.1 MHz	

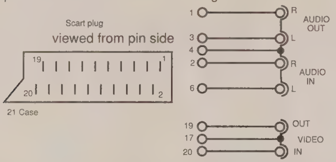
Common Connectors

DIN Connectors

Contact Arrangement	Application		Connections 1	2	3	4	5
MALE PLUG 	Microphone	Mono (balanced)	Hot lead	Screening: earth	Return lead		
		Mono (unbalanced)	Hot lead				
	Microphone	Stereo (balanced)	Hot lead of left-hand channel		Return lead of left-hand channel	Hot lead of right-hand channel	Return lead of right-hand channel
		Stereo (unbalanced)	Hot lead of left-hand channel			Hot lead of right-hand channel	
FEMALE SOCKET 	Turntable		Monaural system		Hot lead		Connected to 3
		Stereophonic system			Hot lead of left-hand channel		Hot lead of right-hand channel
	Tape Recorder	Monaural system	Input signal		Output signal	Connected to 1	Connected to 3
		Stereophonic system	Input signal of left-hand channel		Output signal of left-hand channel	Input signal of right-hand channel	Output signal of right-hand channel

SCART Connector

The Scart connector, also known as the Euroconnector or Peri-Television connector, is part of a system for connecting television receivers and other home entertainment equipment. A Scart connector has 21 pins which provide for stereo audio and composite video in and out, RGB, two data lines and two control lines. A variation allows for separate chrominance and lumunance signals.



Pin	Use	Level/impedance
1	Audio Output (R)	0.5V/1K-ohm
2	Audio Input (R)	0.5V/10K-oh
3	Audio Output (L)	0.5V/1K-ohm
4	Audio Ground	
5	Blue Ground	
6	Audio Input (L)	0.5V/10K-ohm
7	Blue	0.7Vp-p/75 ohm
8	Status (CVBS)	L: 0-2V H: 10-12V/10K-ohm
9	Green Ground	
10	Data D2B (Inverted)	
11	Green	0.7Vp-p/75 ohm
12	Data D2B	
13	Red Ground	
14	D2B Ground	
15	Red	0.7Vp-p/75 ohm
16	RGB Status/Fast Blanking	L: 0-0.4V H: 1-3V/75 ohm
17	CVBS Video Ground	
18	RGB Status Ground	
19	Composite Video Output	1V/75 ohm
20	Composite Video Input	1V/75 ohm
21	Case/shield	

Notes:

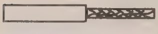
1. Pin 8 is used to select between an internal and external composite video signal. +12V applied to this pin will enable the composite video input on pin 20. Alternatively, this pinput may be enabled via a control on the video display device, e.g. an external AV select switch.
2. Pin 16 is a control line to select the external RGB inputs. +3V applied to this pin enables the RGB inputs on pins 15, 11 and 7.
3. When used for S-VHS signals, pin 15 carries chrominance and pin 20 luminance.
4. Pin 10 and 14 have been assigned for data for controlling and monitoring other appliances.

Wiring RF Plugs

Belling-Lee Type

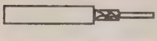
Step 1.

Cut end of cable evenly and remove 22mm of outer sheath.



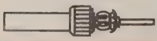
Step 2:

Remove 16mm of braid and dielectric, taking care not to damage centre conductor. Lightly tin conductor.



Step 3:

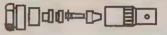
Slide cap and collet clamp over cable and slightly squeeze collet in position. Comb braid out and fan back over collet.



Step 4:

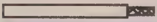
Solder tip of plug to centre conductor. Do not overheat. Push sub-assembly into body of plug, and screw cap onto body to complete assembly.

BNC Type (Female)



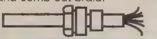
Step 1:

Cut end of cable evenly and remove 8mm of outer sheath.



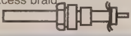
Step 2:

Slide clamp nut and pressure sleeve over cable, and comb out braid.



Step 3:

Fold braid back and insert ferrule between braid and dielectric. Trim off excess braid.

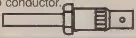


Step 4:

Remove 5mm of dielectric without damaging centre conductor. Tin conductor.

Step 5:

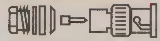
Slide rear insulator over conductor hard against rear insulator. Solder contact to conductor.



Step 6:

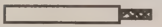
Fit front insulator in body and push sub-assembly onto body. Slide pressure sleeve into body and screw in the clamp nut to clamp cable.

BNC Type (Male)



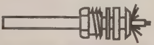
Step 1:

Cut end of cable evenly, and remove 7mm of outer sheath.



Step 2:

Slide clamp-nut, washer and rubber spacer over cable. Slide pressure sleeve over braid, and fan out braid.



Step 3:

Fold back braid against pressure sleeve and trim off excess. Strip 4mm of inside insulation off centre wire. Solder pin onto centre wire.

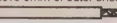
Step 4:

Fit assembly, pin first, into main receptacle. Push washer, rubber spacer and clamp nut up and screw into place.

'N' Type

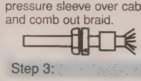
Step 1:

Cut end of cable evenly and remove 9mm of outer sheath.



Step 2:

Slide clamp nut and pressure sleeve over cable, and comb out braid.



Step 3:

Fold braid back and insert ferrule between braid and dielectric. Trim off excess braid and remove 5.5mm dielectric without damaging inner conductor. Tin end of conductor.

Step 4:

Slide rear insulator over conductor and position against end of dielectric. Slide contact over conductor until hard against rear insulator. Solder contact to conductor.

Step 5:

Fit front insulator in body and push sub-assembly into body. Slide pressure sleeve into body and screw in the clamp nut to clamp cable.

UHF Type

Step 1:

Cut end of cable evenly and remove 27mm of outer sheath.

Step 2:

Slide coupling ring and adaptor onto sheath. Fan braid back over sheath.

Step 3:

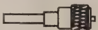
Compress braid around cable and position adaptor so braid fans over adaptor. Trim off excess braid.

Step 4:

Remove 12.5mm dielectric and tin conductor. Screw the plug assembly onto cable and solder plug to braid through solder holes.

Step 5:

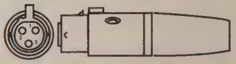
Solder conductor to centre pin and screw coupling ring onto assembly.



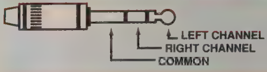
3-PIN XLR Connectors

Widely used in professional audio applications these connectors generally offer a locking mechanism, very good cable clamping and low contact resistance. The pins are arranged so that when the connectors mate, one pin (used as the ground pin) always makes contact before the other two.

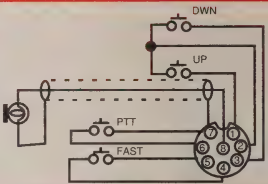
IEC Standard	Common Alternative
1. Earth/Shield	1. Earth/Shield
2. In Phase (hot)	2. Out of Phase
3. Out of Phase (cold)	3. In Phase



Headphone Plug



Yaesu 8-PIN Microphone Connection

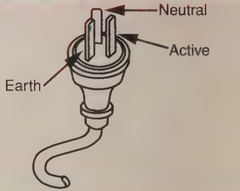


Commonly used on base and mobile transceivers

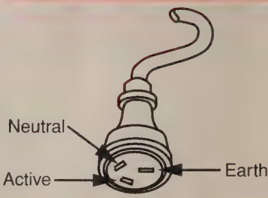
Get It Right!

Note the locations of the Active, Neutral and Earth pins, and their associated wire colours in the table below. If you are replacing a mains plug or socket on an extension cord, then follow exactly the wiring instructions supplied with the mains plug or socket.

Plug



Socket & Power Point



Colour Code Table

Conductor		Old
Active	Brown	Red
Neutral	Blue	Black
Earth	Green/Yellow	Green

Computer Connectors

PC Video Connections

PIN#	VGA	EGA	CGA	MDA
1	RED	GND.	GND.	GND.
2	GREEN/MONO	RED 2	GND.	GND.
3	BLUE	RED	RED	–
4	–	GREEN	GREEN	–
5	–	BLUE	BLUE	–
6	R-GND.	GREEN 2/INTENSITY	+INTENSITY	+INTENSITY
7	G-GND.	BLUE 2/MONO VIDEO	–	+VIDEO
8	B-GND.	HORIZONTAL DRIVE	+HOR. DRV.	+HOR. DRV.
9	–	VERT. DRV.	–VERT. DRV.	–VERT. DRV.
10	GND.			
11	GND. (COLOUR)			
12	–			
13	HOR. SYNC.			
14	VERT. SYNC.			
15	–			

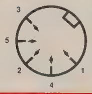
Parallel Printer Connections

FUNCTION AT PRINTER	PRINTER PIN#	PC PIN#
–STROBE IN	1	1
–DATA 1 IN	2	2
+DATA 2 IN	3	3
+DATA 3 IN	4	4
+DATA 4 IN	5	5
+DATA 5 IN	6	6
+DATA 6 IN	7	7
+DATA 7 IN	8	8
+DATA 8 IN	9	9
–SELECT IN	36	17

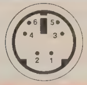
FUNCTION AT PRINTER	PRINTER PIN#	PC PIN#
+AUTO LF IN	14	14
–INIT IN	31	16
–ACK, OUT	10	10
+BUSY OUT	11	11
+PAPER END OUT	12	12
+SELECT OUT	13	13
–FAULT OUT	32	15
GND.	19-30	18-25

Keyboard Connectors

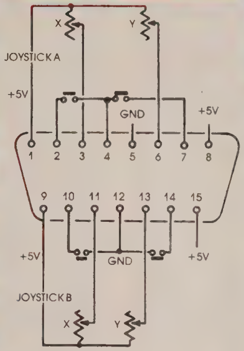
PC/XT/AT	
1	+KDB CLOCK
2	+KBD DATA
3	–KBD RESET
4	GND.
5	+5V



PS/2 (KBD/MOUSE) PIN#	FUNCTION
1	+ DATA
2	–
3	GND.
4	+ 5V
5	+ CLOCK
6	–



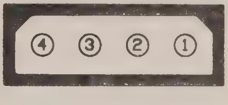
PC Games Adaptor



PC Floppy Drive Power Connections

Pin	Power
1	+ 12 Volts
2	12 Volts return
3	5 Volts return
4	+ 5 Volts

Front view of connector on disk drive



R 1802 Metal Oxide Varistor

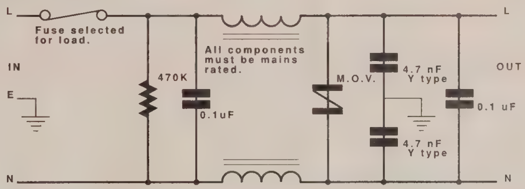
Metal Oxide Varistors are voltage dependent symmetrical resistors intended to protect equipment from transient voltages resulting from lightning strikes, load dumps etc. When subjected to a high-energy voltage transient, the device's impedance changes from a high standby value to a very low conducting value. The use of these devices not only significantly reduces the chance of electrical damage but also improves equipment reliability.

Ratings and Characteristics

Maximum continuous voltage	
sine wave RMS	275V
DC	350V
Maximum Energy (10/100uS pulse)	75J
Maximum dissipation	600mW
Peak Current (single 8/20uS pulse)	4500A
Minimum Varistor Voltage (1mA d.c. test)	387V
Maximum Clamping Voltage (50A, 8/20uS)	710V
Typical Capacitance	460pF

A circuit showing a typical application of a device in a line filter is shown.

Note that because a varistor may explode if subjected to energy levels in excess of maximum ratings, protective fusing and/or shielding is recommended to guard against physical damage.



Note: An 8/20uS pulse refers to a pulse which rises from 10% to 90% in 8uS and falls from 100% to 50% in 20uS. This pulse is considered to be representative of lightning strikes.

R 1804 Gas Arrester

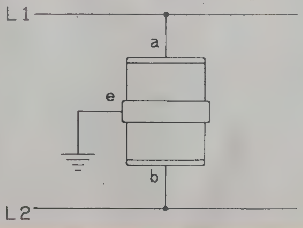
Gas arresters offer protection against voltage transients by switching to a low voltage arc state when their spark-over voltage is exceeded. Under normal conditions the devices are effectively open-circuit, presenting a small capacitance between electrodes.

Because the devices clamp to around 10 to 20 volts while in the arcing condition, they are not suitable for connection across higher voltage, low impedance supply lines such as 240V mains. They are suitable for use in lower voltage, current limited applications such as in telecommunications networks and antenna circuits.

Model R 1804 is a 3 electrode device for connection between 2 lines and ground. It is Austel certified for use in telecommunications equipment. (Austel CCL A90/ME/0041.)

Ratings and Characteristics

Discharge Current		
	(8/20uS pulse a+b-e)	20000A
	(a-e, b-e)	10000A
	(AC 50Hz a+b-e)	20A
	(a-e, b-e)	10A
Sparkover Voltage		
	(DC a-e, b-e)	480-720V
	(Impulse a-e, b-e)	<1200V
Insulation Resistance	(@ 100V)	>10^{10}ohms
Capacitance	(a-e, b-e)	<2.2pF
	(a-b)	<1.2pF



Hexadecimal Constants

Hex Code	Most Significant Bytes IV	III	Least Significant Bytes II	I
0	0	0	0	0
1	4096	256	16	1
2	8192	512	32	2
3	12288	768	48	3
4	16384	1024	64	4
5	20480	1280	80	5
6	24567	1536	96	6
7	28672	1792	112	7
8	32768	2048	128	8
9	36864	2304	144	9
A	40960	2560	160	10
B	45056	2816	176	11
C	49152	3072	192	12
D	53248	3328	208	13
E	57344	3584	224	14
F	61440	3840	240	15

Hex-To-Decimal Conversion

Decimal Value = IV + III + II + I

The RS-232C Interface

The Basic RS-232C Electrical Specification

Communication rate:
0-20,000 bits per second

Driver output voltage levels maximum no load:
-25V logic 1. +25V logic 0

Driver output voltage ranges for loads between 3k and 7k ohms:
logic 1: -15V (7K) and -5V (3k)
logic 0: +15V (7k) and +5V (3k)

Driver output current, short circuit:
500mA maximum

Driver output impedance with power off:
300 ohms minimum

Maximum driver output slew rate:
30V per microsecond

Receiver input resistance:
7k ohms maximum
3k ohms minimum

Effective receiver input capacitance:
2500pF maximum

Maximum receiver input voltage range:
-25V to +25V

The following table shows the nine most common signals used for serial communications and their pin allocations for nine and 25 pin connectors.

	Signal Name	PIN No. (9 pin)	PIN No. (25 pin)
TD	Transmitted Data	3	2
RD	Received Data	2	3
RTS	Request to Send	7	4
CTS	Clear to Send	8	5
DSR	Data Set Ready	6	6
SG	Signal Ground	5	7
CD	Carrier Detect	1	8
DTR	Data Terminal Ready	4	20
RI	Ring Indicator	9	22

ASCII Character Codes as defined in ANSI X3.4

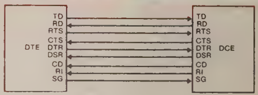
Dec	Hex	Char	Dec	Hex	Char	Dec	Hex	Char	Dec	Hex	Char
0	0	NUL	33	21	!	66	42	B	99	63	c
1	1	SOH	34	22	"	67	43	C	100	64	d
2	2	STX	35	23	#	68	44	D	101	65	e
3	3	ETX	36	24	$	69	45	E	102	66	f
4	4	EOT	37	25	%	70	46	F	103	67	g
5	5	ENQ	38	26	&	71	47	G	104	68	h
6	6	ACK	39	27	'	72	48	H	105	69	i
7	7	BEL	40	28	(	73	49	I	106	6A	j
8	8	BS	41	29	)	74	4A	J	107	6B	k
9	9	HT	42	2A	*	75	4B	K	108	6C	l
10	A	LF	43	2B	+	76	4C	L	109	6D	m
11	B	VT	44	2C	,	77	4D	M	110	6E	n
12	C	FF	45	2D	-	78	4E	N	111	6F	o
13	D	CR	46	2E	.	79	4F	O	112	70	p
14	E	SO	47	2F	/	80	50	P	113	71	q
15	F	SI	48	30	0	81	51	Q	114	72	r
16	10	DLE	49	31	1	82	52	R	115	73	s
17	11	DC1	50	32	2	83	53	S	116	74	t
18	12	DC2	51	33	3	84	54	T	117	75	u
19	13	DC3	52	34	4	85	55	U	118	76	v
20	14	DC4	53	35	5	86	56	V	119	77	w
21	15	NAK	54	36	6	87	57	W	120	78	x
22	16	SYN	55	37	7	88	58	X	121	79	y
23	17	ETB	56	38	8	89	59	Y	122	7A	z
24	18	CAN	57	39	9	90	5A	Z	123	7B	{
25	19	EM	58	3A	:	91	5B	[	124	7C	|
26	1A	SUB	59	3B	;	92	5C	\	125	7D	}
27	1B	ESC	60	3C	<	93	5D	]	126	7E	~
28	1C	FS	61	3D	=	94	5E	→	127	7F	DEL
29	1D	GS	62	3E	>	95	5F	-			
30	1E	RS	63	3F	?	96	60	'			
31	1F	US	64	40	@	97	61	a			
32	20	SPACE	65	41	A	98	62	b			

ASCII Control Codes

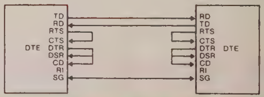
NUL	(Ctrl @)	Null	DLE	(Ctrl P)	Data Link Escape
SOH	(Ctrl A)	Start of Heading	DC1	(Ctrl Q)	Device Control 1
STX	(Ctrl B)	Start of Text	DC2	(Ctrl R)	Device Control 2
ETX	(Ctrl C)	End of Text	DC3	(Ctrl S)	Device Control 3
EOT	(Ctrl D)	End of Transmission	DC4	(Ctrl T)	Device Control 4
ENQ	(Ctrl E)	Enquiry	NAK	(Ctrl U)	Negative Acknowledge
ACK	(Ctrl F)	Acknowledge	SYN	(Ctrl V)	Synchronous Idle
BEL	(Ctrl G)	Bell	ETB	(Ctrl W)	End of Transmission Block
BS	(Ctrl H)	Backspace	CAN	(Ctrl X)	Cancel
HT	(Ctrl I)	Horizontal Tab	EM	(Ctrl Y)	End of Medium
LF	(Ctrl J)	Line Feed	SUB	(Ctrl Z)	Substitute
VT	(Ctrl K)	Vertical Tab	ESC	(Ctrl [)	Escape
FF	(Ctrl L)	Form Feed	FS	(Ctrl \)	File Separator
CR	(Ctrl M)	Carriage Return	GS	(Ctrl])	Group Separator
SO	(Ctrl N)	Shift Out	RS	(Ctrl ^)	Record Separator
SI	(Ctrl O)	Shift In	US	(Ctrl _)	Unit Separator

Common RS-232C Connections

Each signal (except ground) is either an input or an output depending whether it is on the Data Terminal Equipment 'DTE' (e.g. a computer terminal) or the Data Circuit Terminating Equipment 'DCE' (e.g. a modem). A typical connection is shown here.



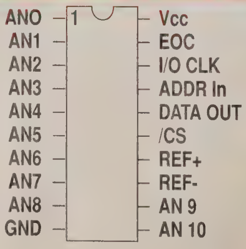
When two computer terminals (DTEs) are connected together a 'null modem' hook-up is needed to fool each DTE into thinking that it is connected to DCE. A typical null modem connection is shown here.



Z-6830 TLC542C 11-Input Serial A-D Converter3

The Z-6830 is a serial 8-bit successive approximation analogue to digital converter. This chip is used for the A-D component of the K-2805 Parallel Port Interface Kit.

The TLC542C is operated via a 5-wire interface from a microprocessor or parallel I/O port. 11 analogue inputs (AN0-AN10) are available for use, a further analogue channel (AN11) is internally connected to half the supply rail, and can be used as a self-test or battery check. Once the 4-bit address has been received the A-D conversion is initiated. This conversion is internally clocked and completed in 20uS. The voltage reference pins Ref+ and Ref- can be connected directly to Vcc and Ground respectively, to directly suit a 0V to +5V range at the analogue inputs. The chip is addressed via the 3 input pins, /CS (chip select), IO-CLK, and ADDR IN. This operation takes 8 clock cycles; For the first 4 clock cycles, 4 address bits are written (MSB first) to ADDR IN to specify the analogue input for the next conversion. During these 8 clock cycles the 8-bit result from the previous A-D conversion is available in serial form at the DATA OUT pin (MSB first). The EOC (end of conversion) pin signals when the A-D conversion is complete.

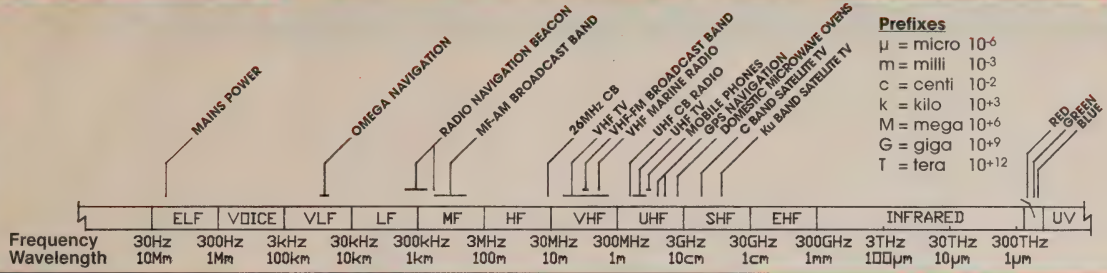


Specifications

Conversion Time	20uS typ.
Power Dissipation	10mW typ.
Unadjusted Error (for differential Vref > 4.75V)	+/-0.5 LSB max.

	Min.	Nom.	Max.
Supply Voltage	4.75	5.0	5.5V
Analogue Input Voltage	0		Vcc
Diff. Reference Voltage	1	Vcc	Vcc+0.2
Clock frequency	0	1.1 MHz	

THE ELECTROMAGNETIC SPECTRUM



Prefixes

μ = micro 10^{-6}
m = milli 10^{-3}
c = centi 10^{-2}
k = kilo 10^{+3}
M = mega 10^{+6}
G = giga 10^{+9}
T = tera 10^{+12}

New Zealand MF-AM Broadcast Standards

Frequency Range:	526.5-1605.5kHz
Channel Frequencies:	531, 540, 549 ... 1593, 1602 (Note: Some special services are located slightly above this band. Receivers may need modification).
Stereo Signal:	Compatible quadrature amplitude modulation (C-Quam) 25Hz +/-0.1 Hz with a dev. of 3% to 5% of the quadrature chl
Frequency Response:	within 2dB (50Hz-7.5kHz)
THD:	Not exceeding 4% at 80% modulation (400Hz to 5kHz)
Stereo Separation:	18dB min.

New Zealand VHF-FM Broadcast Standards

Frequency Range:	88-108MHz
Channel Frequencies:	88.1, 88.3... 107.7, 107.9
Deviation:	75kHz
Pre-emphasis/ De-emphasis:	50 microseconds
Stereo Channel Subcarrier Frequency:	38kHz
Pilot Frequency:	19kHz

Colour TV Broadcast Standards

Channel Width:	7 MHz vestigial sideband trans.
Vision Carrier:	1.25MHz above lower frequency edge of channel
Primary Sound Carrier:	5.5MHz above vision carrier
Nicam Sound	728K Bit/sec
Carrier:	5.85MHz above vision carrier
Vision Modulation:	Negative amplitude modulation
Lines per Picture:	625 lines, interlaced 2:1
Line Frequency:	15625Hz
Field Frequency:	50Hz
Colour Subcarrier Frequency:	4.43361875 MHz
Aspect Ratio:	4:3
Horizontal Sync Pulse Amplitude:	95% carrier amplitude
Front Porch:	1.3 - 1.8us
Back Porch:	Line blanking interval - (front porch + sync pulse)
Line Blanking Interval:	11.8 - 12.3us
Black and Blanking Level:	76% peak carrier level
White Level:	20% peak carrier level
Pre-equalisation Pulse Interval:	2.5H (H=line period, 64 us)
Post-equalisation Pulse Interval:	2.5H
Field Sync Pulse Interval:	2.5H
Field Blanking Interval:	2.5 +12us
Ratio peak vision to peak sound carrier:	Single sound carrier systems: 10dB
Sound Modulation:	FM
Sound Deviation:	+/-50kHz
Audio Pre-emphasis	50us

Timing, Test and Data Signals present in the Vertical Sync Pulse

Line	Use
625 – 2.5	Serrated Vertical Sync Pulse
2.5 – 5	Equalising Pulses
6	Blank for Noise Test
7 – 8	Teletext Data
9 – 10	Datacast
11 – 15	Teletext Data
16	Data Signals/Time Code
17 – 18	Teletext Data
19	Composite Test Signal
20	Pal Multiburst Test Signal
21	Teletext Subtitles
22	Blank for Noise Test
23 – 309	Viewable Picture Lines, Field 1
310 – 312.5	Equalising Pulses
312 – 331	Same as Lines 1 – 18
332	Colour Bar Test Signal
333	Modulated Pedestal Signal
334	Teletext Subtitles
335	Blank for Noise Test
336 – 622	Viewable Picture Lines, Field 2
623 – 624	Equalising Pulses

VHF Marine Frequencies

Ch	Freq. Ship	(MHz) Shore	Ch	Freq. Ship	(MHz) Shore
1	156.050	160.650	60	156.025	160.625
2	156.100	160.700	61	156.075	160.675
3	156.150	160.750	62	156.125	160.725
4	156.200	160.800	63	156.175	160.775
5	156.250	160.850	64	156.225	160.825
6	156.300	156.300	65	156.275	160.875
7	156.350	160.950	66	156.325	160.925
8	156.400	156.400	67	156.375	156.375
9	156.450	156.450	68	156.425	156.425
10	156.500	156.500	69	156.475	156.475
11	156.550	156.550	70	156.525	156.525
12	156.600	156.600	71	156.575	156.575
13	156.650	156.650	72	156.625	156.625
14	156.700	156.700	73	156.675	156.675
15	156.750	156.750	74	156.725	156.725
16	156.800	156.800	77	156.875	156.875
17	156.850	156.850	78	156.925	161.525
18	156.900	161.500	79	156.975	161.575
19	156.950	161.550	80	157.025	161.625
20	157.000	161.600	81	157.075	161.675
21	157.050	161.650	82	157.125	161.725
22	157.100	161.700	83	157.175	161.775
23	157.150	161.750	84	157.225	161.825
24	157.200	161.800	85	157.275	161.875
25	157.250	161.850	86	157.325	161.925
26	157.300	161.900	87	157.375	161.975
27	157.350	161.950	87A	157.375	157.375
28	157.5000	162.000	88	157.425	162.025

Chl	Use
6	SAR, Port Operations, Commercial
8	Port Operations, Commercial
9-14	Port Operations
16	Distress and Safety
20	Port Operations
23-28	Public Correspondence (Seaphone)
67	Distress and Safety
68	Port Operations
71	Professional Fishing
72	Yachts, Commercial, Professional Fishing, Port Operations
73	Non-Commercial, Yachts, etc.
74	Commercial
77	Yachts, Professional Fishing
78	Commercial
79	Port Operations
87	Public Correspondence (Seaphone)
87A	Withdrawn 31-3-92

UHF TV Channels

Channels 27 to 62 are UHF Band (Band IV and V-518 to 806 MHz).

Transmissions conform to 625 line CCIR System B on VHF and The vision carrier frequency is nominally 1.25 MHz above the vision carrier frequency; the centre frequency of the NICAM digital sound carrier (if transmitted) is 5.850 MHz above the vision carrier frequency. The B/G variant of 728 NICAM is used which has a total occupied band width of 510 kHz.

Channel Number	Frequency Limits (MHz)	Vision Carrier (MHz)	FM Sound Carrier (MHz)	NICAM Sound Carrier (MHz)
UHF				
27	518 to 526	519.25	524.75	525.10
28	526 to 534	527.25	532.75	533.10
29	534 to 542	535.25	540.75	541.10
30	542 to 550	543.25	548.75	549.10
31	550 to 558	551.25	556.75	557.10
32	558 to 566	559.25	564.75	565.10
33	566 to 574	567.25	572.75	573.10
34	574 to 582	575.25	580.75	581.10
35	582 to 590	583.25	588.75	589.10
36	590 to 598	591.25	596.75	597.10
37	598 to 606	599.25	604.75	605.10
38	606 to 614	607.25	612.75	613.10
39	614 to 622	615.25	620.75	621.10
40	622 to 630	623.25	628.75	629.10
41	630 to 638	631.25	636.75	637.10
42	638 to 646	639.25	644.75	645.10
43	646 to 654	647.25	652.75	653.10
44	654 to 662	655.25	660.75	661.10
45	662 to 670	663.25	668.75	669.10
46	670 to 678	671.25	676.75	677.10
47	678 to 686	679.25	674.75	685.10
48	686 to 694	687.25	692.75	693.10
49	694 to 702	695.25	700.75	701.10
50	702 to 710	703.25	708.75	709.10
51	710 to 718	711.25	716.75	717.10
52	718 to 726	719.25	724.75	725.10
53	726 to 734	727.25	732.75	733.10
54	734 to 742	735.25	740.75	741.10
55	742 to 750	743.25	748.75	749.10
56	750 to 758	751.25	756.75	757.10
57	758 to 766	759.25	764.75	765.10
58	766 to 774	767.25	772.75	773.10
59	774 to 782	775.25	780.75	781.10
60	782 to 790	783.25	788.75	789.10
61	790 to 798	781.25	796.75	797.10
62	798 to 806	799.25	804.75	805.10

New Zealand VHF TV Channels

Ch.	Vision (MHz)	Sound (MHz)	Ch.	Vision (MHz)	Sound (MHz)
1	45.25	50.75	7	196.25	201.75
2	55.25	60.75	8	203.25	208.75
3	62.25	67.75	9	210.25	215.75
4	175.25	180.75	10	217.25	222.75
5	182.25	187.75	11	224.25	229.75
6	189.25	194.75			

Australian & New Zealand CB Radio Channels

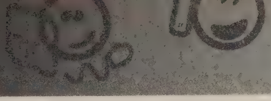
Ch No.	Aust. H.F. (MHz)	NZ UHF (MHz)	NZ H.F. (MHz)
1	26.965	476.425	26.330
2	26.975	476.450	26.340
3	26.985	476.475	26.350
4	27.005	476.500	26.370
5	27.015	476.525	26.380
6	27.025	476.550	26.390
7	27.035	476.575	26.400
8	27.055	476.600	26.420
9	27.065	476.625	26.430
10	27.075	476.650	26.440
11	27.085	476.675	26.450
12	27.105	476.700	26.470
13	27.115	476.725	26.480
14	27.125	476.750	26.490
15	27.135	476.775	26.500
16	27.155	476.800	26.520
17	27.165	476.825	26.530
18	27.175	476.850	26.540
19	27.185	476.875	26.550
20	27.205	476.900	26.570
21	27.215	476.925	26.580
22	27.225	476.950	26.590
23	27.255	476.975	26.620
24	27.235	477.000	26.600
25	27.245	477.025	26.610
26	27.265	477.050	26.630
27	27.275	477.075	26.640
28	27.285	477.100	26.650
29	27.295	477.125	26.660
30	27.305	477.150	26.670
31	27.315	477.175	26.680
32	27.325	477.200	26.690
33	27.335	477.225	26.700
34	27.345	477.250	26.710
35	27.355	477.275	26.720
36	27.365	477.300	26.730
37	27.375	477.325	26.740
38	27.385	477.350	26.750
39	27.395	477.375	26.760
40	27.405	477.400	26.770

Emergency Channels	
Aust HF (AM)	Ch. 9
Aust UHF	Ch. 5/35
NZ HF	Ch.15

Calling Channels	
Aust HF (AM)	Ch.11
Aust HF (SSB)	Ch. 6
Aust UHF	Ch.11
NZ HF	Ch.15

Conversion Table

Quantity	Imperial Unit	Metric Unit	Conversion Factors (Approximate)	
			Imperial to Metric Units	Metric to Metric Units
Length	inch (in)	millimetre (mm) or centimetre (cm)	1 in = 25.4 mm	1 cm = 0.394 in
	foot (ft)	centimetre or metre (m)	1 ft = 30.5 cm	1 m = 3.28 ft
	yard (yd)	metre (m)	1 yd = 0.914 m	1 m = 1.09 yd
	furlong (fur)	metre (m) or kilometre (km)	1 fur = 201 m	
	mile	kilometre (km)	1 mile = 1.61 km	1 km = 0.621 mile
	(for navigation)	international nautical mile (n mile)	1 n mile = 1.852 km	
Mass	ounce (oz)	gram (g)	1 oz = 28.3 g	1 g = 0.00353 oz
	pound (lb)	gram (g) or kilogram (kg)	1 lb = 454 g	1 kg = 2.20 lb
	stone	kilogram (kg)	1 stone = 6.35 kg	1 kg = 0.157 stone
	ton	tonne (t)	1 ton = 1.02 t	1 t = 0.984 ton
Area	square inch (in^2)	square centimetre (cm^2)	1 in^2 = 6.45 cm^2	1 cm^2 = 0.155 in^2
	square foot (ft^2)	square centimetre (cm^2) or square metre (m^2)	1 ft^2 = 929 cm^2	1 m^2 = 10.8 ft^2
	square yard (yd^2)	square metre (m^2)	1 yd^2 = 0.836 m^2	1 m^2 = 1.200 yd^2
	perch (p)	square metre (m^2)	1 p = 25.3 m^2	1 m^2 = 0.0395 p
	rood (rd)	hectare (ha)	1 rd = 0.101 ha	1 ha = 9.88 rd
	acre (ac)	hectare (ha)	1 ac = 0.405 ha	1 ha = 2.47 ac
	square mile	square kilometre (km^2)	1 square mile = 2.59 km^2	1 km^2 = 0.386 square mile
Volume	cubic inch (in^3)	cubic centimetre (cm^3)	1 in^3 = 16.4 cm^3	1 cm^3 = 0.0610 in^3
	cubic food (ft^3)	cubic metre (m^3)	1 ft^3 = 0.0283 m^3	1 m^3 = 35.3 ft^3
	cubic yard (yd^3)	cubic metre (m^3)	1 yd^3 = 0.765 m^3	1 m^3 = 1.31 yd^3
Volume (fluids)	fluid ounce (fl oz)	millilitre (ml)	1 fl oz = 28.4 ml	1 ml = 0.0352 fl oz
	pint (pt)	millilitre (ml) or litre (l)	1 pt = 568 ml	1 litre = 1.76 pt
	gallon (gal)	litre (l) or cubic metre (m^3)	1 gal = 4.55 litre	1 m^3 = 220 gal
	acre foot	cubic metre (m^3) or megalitre (Ml)	1 acre foot = 1230 m^3 = 1.23 Ml	1 Ml = 0.811 acre foot
Force	pound-force (lbf)	newton (N)	1 lbf = 4.45 N	1 N = 0.225 lbf
	ton-force (tonf)	kilonewton (kN)	1 tonf = 9.96 kN	1 kN = 0.100 tonf
Pressure	pound per square inch (psi)	kilopascal (kPa)	1 psi = 6.89 kPa	1 kPa = 0.145 psi
	atmosphere (atm)	kilopascal (kPa) or megapascal (MPa)	1 atm = 101 kPa	1 MPa = 9.87 atm
	ton per square inch (ton/in^2)	megapascal (MPa)	1 ton/in^2 = 15.4 MPa	1 MPa = 0.0647 ton/in^2
	(for meteorology) inch of mercury (inHg)	millibar (mb)	1 inHg = 33.9 mb 1mb = 100 Pa	1 mb = 0.0295 inHg
Velocity	mile per hour (mph)	kilometre per hour (km/h)	1 mph = 1.61 km/h	1 km/h = 0.621 mph
	(for navigation)	knot (kn)	1 kn = 1.85 km/h	
Temperature	degree Fahrenheit (°F)	degree Celsius (°C)	$^\circ C = \frac{5}{9}(^\circ F) - 32)$	$^\circ F = \frac{9 \times {}^\circ C}{5} = 32$
Density	pound per cubic inch (lb/in^3)	gram per cubic centimetre (g/cm^3)	1 lb/in^3 = 27.7 g/cm^3	1 g/cm^3 = 0.0361 lb/in^3
		= tonne per cubic metre (t/m^3)	1 lb/in^3 - 27.7 t/m^3	1 t/m^3 0.0361 lb/in^3
	ton per cubic yard	tonne per cubic metre (t/m^3)	1 ton/yd^3 = 1.33 t/m^3	1 t/m^3 = 0.752 ton/yd^3
Energy	British thermal unit (Btu)	kilojoule (kJ)	1 Btu = 1.06 kJ	1 kJ = 0.948 Btu
	therm	megojoule (Mj)	1 therm = 106 Mj	1 Mj = 9.48 x 10^3 therm
	(for electrical energy)	kilowatt hour (kWh)	1 kWh = 3.60 Mj	
Power	horsepower (hp)	kilowatt (kW)	1 hp = 0.746 kW	1 kW = 1.34 hp
Time		second (s)		
		minute (min)	1 min = 60 s	
		hour (h)	1 h = 3600 s	
Frequency	cycle per second (c/s)	hertz (Hz)	1 c/s = 1 Hz	1 Hz = 1 c/s
Angular Velocity	revolution per minute (rpm)	radian per second (rad/s) revolution per minute (rpm)	1 rpm = 0.105 rad/s	1 rad/s = 9.55 rpm



Notes

1999

	May	June	July	August
M	31 3 10 17 24	7 14 21 28	5 12 19 26	30 2 9 16 23
T	4 11 18 25	1 8 15 22 29	6 13 20 27	31 3 10 17 24
W	5 12 19 26	2 9 16 23 30	7 14 21 28	4 11 18 25
T	6 13 20 27	3 10 17 24	1 8 15 22 29	5 12 19 26
F	7 14 21 28	4 11 18 25	2 9 16 23 30	6 13 20 27
S	1 8 15 22 29	5 12 19 26	3 10 17 24 31	7 14 21 28
S	2 9 16 23 30	6 13 20 27	4 11 18 25	1 8 15 22 29

	September	October	November	December
M	6 13 20 27	4 11 18 25	1 8 15 22 29	6 13 20 27
T	7 14 21 28	5 12 19 26	2 9 16 23 30	7 14 21 28
W	1 8 15 22 29	6 13 20 27	3 10 17 24	1 8 15 22 29
T	2 9 16 23 30	7 14 21 28	4 11 18 25	2 9 16 23 30
F	3 10 17 24	1 8 15 22 29	5 12 19 26	3 10 17 24 31
S	4 11 18 25	2 9 16 23 30	6 13 20 27	4 11 18 25
S	5 12 19 26	3 10 17 24 31	7 14 21 28	5 12 19 26

2000

	January	February	March	April
M	31 3 10 17 24	7 14 21 28	6 13 20 27	3 10 17 24
T	4 11 18 25	1 8 15 22 29	7 14 21 28	4 11 18 25
W	5 12 19 26	2 9 16 23	1 8 15 22 29	5 12 19 26
T	6 13 20 27	3 10 17 24	2 9 16 23 30	6 13 20 27
F	7 14 21 28	4 11 18 25	3 10 17 24 31	7 14 21 28
S	1 8 15 22 29	5 12 19 26	4 11 18 25	1 8 15 22 29
S	2 9 16 23 30	6 13 20 27	5 12 19 26	2 9 16 23 30

	May	June	July	August
M	1 8 15 22 29	5 12 19 26	31 3 10 17 24	7 14 21 28
T	2 9 16 23 30	6 13 20 27	4 11 18 25	1 8 15 22 29
W	3 10 17 24 31	7 14 21 28	5 12 19 26	2 9 16 23 30
T	4 11 18 25	1 8 15 22 29	6 13 20 27	3 10 17 24 31
F	5 12 19 26	2 9 16 23 30	7 14 21 28	4 11 18 25
S	6 13 20 27	3 10 17 24	1 8 15 22 29	5 12 19 26
S	7 14 21 28	4 11 18 25	2 9 16 23 30	6 13 20 27

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Thank you –

The Staff of Dick Smith Electronics

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